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TELECOMMUNICATIONS POLICY,
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No. 86

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27 July 1979

WORLDWIDE REPORT

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CONTENTS

PAGE

WORLDWIDE AFFAIRS

Information Conference in Acapulco Ends (TASS, 10 Jun 79).....	1
USSR, Laos Sign Protocol on Satellite Station (KPL, 15 Jun 79).....	2
Bulgaria, Algeria Expand Cooperation in Communications (BIA, 14 Jun 79).....	3
'TANJUG' Signs Cooperation Agreement With Peruvian Agency (TANJUG, 24 Jun 79).....	4
Yugoslavia, DPRK Sign Radio, TV Cooperation Agreement (TANJUG, 25 Jun 79).....	5
Briefs	
Kenyan-Polish Media Cooperation	6
GDR-Japan Broadcasting Agreement	6
PRC-Yugoslav Broadcasting Agreement	6
Japanese Microwave for Potosi	7

ASIA

AUSTRALIA

Telecommunications, Transport Strikes Worsen in Australia (AFP, 5 Jul 79).....	8
--	---

CONTENTS (Continued)

Page

Broadcasting Executive Advocates Use of Domestic Satellite (THE AUSTRALIAN, 14 May 79).....	9
--	---

Official Tells Advantages of Landsat for Queensland (THE COURIER-MAIL, 8 May 79).....	10
--	----

Briefs Car Radios for Australia	11
------------------------------------	----

INDIA

ONGC Telecom Link Project Expected by May 1980 (THE HINDU, 23 Jun 79).....	12
---	----

INDONESIA

Palapa Satellite Promotes Regional Cooperation (BUSINESS TIMES, 17 May 79).....	13
--	----

JAPAN

Briefs	
Computer Buy-Back Reserves	15
Fifth Generation Computer	15
Software Architecture Computer	15
E-Beam System	15
Optical Memory Element	16
Wiring Broad Technology	16
64 Kilobit RAM	16
Bubble Memory	16

MALAYSIA

Submarine Cable To Link East, West Malaysia (BUSINESS TIMES, 17 May 79).....	17
---	----

Telecommunications Services Expanding Under Third Plan (BUSINESS TIMES, 17 May 79).....	18
--	----

PEOPLE'S REPUBLIC OF CHINA

Shanghai Scores 'Major Achievement' in Computer Research (Shanghai City Service, 19 Jun 79).....	20
---	----

CONTENTS (Continued)	Page
SOUTH KOREA	
Foreign Firms To Bid for ROK's Multi-Billion Dollar ESS Network (THE KOREA TIMES, 27 Jun 79).....	21
Briefs	
News Service Agreement	23
SRI LANKA	
'TANJUG' Reports on Information Field (TANJUG, 10 Jun 79).....	24
EAST EUROPE	
INTERNATIONAL AFFAIRS	
Briefs	
Poland-GDR Media Cooperation	25
POLAND	
Convention on Maritime Satellite Communications Ratified (PAP, 27 Jun 79).....	26
Briefs	
Central Committee Media Session	27
ROMANIA	
Briefs	
Manufacture of Minicomputers	28
LATIN AMERICA	
PERU	
Briefs	
Constitution Clause on Media	29

CONTENTS (Continued)

Page

NEAR EAST AND NORTH AFRICA

ALGERIA

- Minister of Information on Nonaligned Broadcasting
(EL MOUDJAHID, 4 Jun 79)..... 30

IRAQ

- Briefs
Communications Between Iraq and Kuwait 35

SUB-SAHARAN AFRICA

ETHIOPIA

- Satellite Communications To Be Operational in June
(THE ETHIOPIAN HERALD, 3 Jun 79)..... 36

MADAGASCAR

- Radio Netherlands Technical Aid Reported
(MADAGASCAR-MATIN, 23 May 79)..... 38

NIGER

- Briefs
Somgande Ground Station 41

SOUTH AFRICA

- Briefs
Bophuthatswana FM Towers 42

USSR

- West's Approach to Media Role, Information Cooperation
Hit
(A. Nabatchikov; IZVESTIYA, 12 Jun 79)..... 43
- Improving the Technical Base of Radio and Television
Broadcasting
(A. Pustovoytovskiy; VESTNIK SVYAZI, May 78)..... 45

CONTENTS (Continued)

Page

Gosteleradio Official Comments on Broadcasting System (Genrikh Zigmundovich Yushkyavichyus Interview; GOVORIT I POKAZYVAYET MOSKVA, 7-13 May 79).....	49
Radio Day: Television, Radio Facilities and Olympic Construction (V. Belikov; IZVESTIYA, 6 May 79).....	55
Briefs	
Khabarovskiy Kray Radio, TV	58
New Automation System	58
New TV Tower	58

WESTERN EUROPE

INTERNATIONAL AFFAIRS

Nordic Countries To Set Up Joint Data Net (S. Stokke; TELEKTRONIKK, No 4, 1978).....	59
Satellite Project Threatened by Rising Costs (Helsinki Domestic Service, 27 Jun 79).....	66
Telecommunications Station To Be Built in Gibraltar (ABC, 7 Jun 79).....	67

FRANCE

Communist View of Mass Media, Telecommunications (Jean-Claude Quiniou; FRANCE NOUVELLE, 19 May 79).....	68
New National Telephone Call Number System Planned (Denis Fraysse; TELECOMMUNICATIONS, Apr 79).....	73
Telecom Market Being Opened to Smaller Companies (L'USINE NOUVELLE, 17 May 79).....	83

GREECE

Ecevit Accepts Karamanlis Proposal on Balkan Cooperation (Athens Domestic Television Service, 18 Jun 79).....	85
--	----

CONTENTS (Continued)

Page

ITALY

- RAI Considering TV and Radio Broadcasting by Satellite
(RADIOCORRIERE-TV, May 79)..... 86

Satellite Broadcasting Planned, by Pino Di
Salvo
Advantages of Cable TV, by Enzo Castelli

LUXEMBOURG

- TV Satellite To Broadcast to France, FRG
(WIRTSCHAFTSWOCHE, 21 May 79)..... 91

TURKEY

- Ecevit Stresses Importance of Developing Communications
(Ankara Domestic Service, 27 Jun 79)..... 93

WORLDWIDE AFFAIRS

INFORMATION CONFERENCE IN ACAPULCO ENDS

Moscow TASS in English 1015 GMT 10 Jun 79 LD

[Text] Mexico City, June 10, TASS--The sixth session of the international commission for policy-making in the information sphere concluded its work in the Mexican city of Acapulco.

One of the central items at the session was the question of creating new international rules in the sphere of information and liquidating the sway of the imperialist mass media in developing countries. It was stressed in the reports that the struggle for creation of the new rules in the sphere of information is part of the struggle of developing countries to strengthen their economic and political independence.

The commission rejected the plans to transfer financing the mass media in developing countries to the International Bank for Reconstruction and Development and American banks.

The session organized an open round-table discussion on questions of information and culture.

The participants in the session sharply criticized a number of Western agencies subjugating their activity to commercial advertising, hampering the development of national cultures in developing countries.

CSO: 5500

WORLDWIDE AFFAIRS

USSR, LAOS SIGN PROTOCOL ON SATELLITE STATION

Vientiane KPL in English 0914 GMT 15 Jun 79 BK

[Text] Vientiane, 16 June (KPL)--A protocol on the transportation of building materials for the satellite monitoring station to be built for Laos by the Soviet Union was signed in Vientiane on June 15 at the Ministry of Post and Telecommunications. This is in implementation of an agreement signed on September 4, 1978 in Moscow between the Lao and Soviet Governments concerning Soviet assistance in the building of a satellite monitoring station in Laos.

Signing for the Lao side was Somsith Saignavong, director of the Office of the Ministry of Post and Telecommunications, and for the Soviet side Viktor Kobzev, acting commercial counsellor and Vladimir Artemov, attache of the Soviet Embassy in Vientiane. The signing was witnessed by high ranking Lao officials and representatives of the Soviet Embassy.

CSO: 5500

BULGARIA, ALGERIA EXPAND COOPERATION IN COMMUNICATIONS

Sofia BTA in English 1842 GMT 14 Jun 79 AU

[Text] Algiers, June 14 (BTA correspondent)--The four-day visit of the Bulgarian minister of communications, Mr Pando Vanchev, and the documents signed with Algeria, laid the foundations of a bilateral cooperation in the sphere of communications which is to progress rapidly. Very soon a direct telephone and telegraph line will link up Bulgaria with Algeria. The line will be automated after the construction of an international exchange in Sofia in the near future. Bulgaria and Algeria will also be able to exchange television programmes after the ground station for connection with the Intersputnik system becomes operational in Algeria.

Two permanent working groups were set up to draft a long-term cooperation agreement between Bulgaria and Algeria in the spheres of postal affairs and communications.

CSO: 5500

WORLDWIDE AFFAIRS

'TANJUG' SIGNS COOPERATION AGREEMENT WITH PERUVIAN AGENCY

Belgrade TANJUG in English 1620 GMT 24 Jun 79 LD

[Text] Lima, June 24 (TANJUG)--An agreement for cooperation between TANJUG and the Peruvian national information system (SINADI), which includes ANDINA news agency, has been signed in Lima. The agreement was signed by the SINADI director general, Colonel Oscar Torres Llosa, and TANJUG's editor-in-chief, Mihailo Saranovic. Inspired by the aspirations of the non-aligned countries, to which both Peru and Yugoslavia belong, jointly to expand and strengthen as much as possible cooperation in the field of information, the agreement provides for broad cooperation in the bilateral and multilateral spheres, especially within the framework of the non-aligned news agencies pool.

The agreement, first of the kind to be concluded between two news agencies, provides for daily exchange of information, exchange and training of personnel and professional and technical cooperation.

At the talks held during last few days by Mihailo Saranovic and TANJUG's regional correspondent for the Andean countries Velizar Savic with directors and editors-in-chief of the biggest-circulation Peruvian dailies and radio-TV stations, very great interest was expressed in information of Yugoslavia and in TANJUG's newscasts in Spanish. Under the agreement, all information media in Peru will daily receive these newscasts.

CSO: 5500

WORLDWIDE AFFAIRS

YUGOSLAVIA, DPRK SIGN RADIO, TV COOPERATION AGREEMENT

Belgrade TANJUG in English 0958 GMT 25 Jun 79 LD

[Text] Pyongyang, June 25 (TANJUG)--An agreement on cooperation between the Yugoslav Radio-Television and the Committee of the Central Radio-Television of the Democratic People's Republic of Korea was signed here today. The agreement envisages the exchange of radio and television news and other programmes, cooperation in technical development and the exchange of personnel.

The two delegations discussed the activities of the two countries' radio and television networks in the implementation of the actions agreed on in the committee for cooperation of broadcasting organizations of non-aligned countries.

CSO: 5500

BRIEFS

KENYAN-POLISH MEDIA COOPERATION--A delegation of the Ministry of Information and Radio of Kenya has visited Poland at the invitation of the Polish Committee for Radio and Television. The delegation, which was led by Secretary of State George Matheka, had talks with Committee Chairman Maciej Szczepanski on the further development of the cooperation between the radio and television institutions of the two countries. The sides initialed an accord of radio and television cooperation. [Text] [Warsaw TRYBUNA LUDU in Polish 25 May 79 p 4 AU]

GDR-JAPAN BROADCASTING AGREEMENT--An agreement on cooperation between the GDR Broadcasting Service and the Japanese National Broadcasting and Television Company, NHK, was signed on Wednesday [6 June] in Tokyo. It provides among other things for the exchange of musical programs and radio plays, as well as for the mutual assistance of correspondents. Similar contractual agreements had already been concluded by NHK with GDR television. The new agreement was signed by Rolf Weissbach, deputy chairman of the GDR state committee for radio and Katsuki Fujishima, NHK vice president. As stated by both sides, it is based on a fruitful cooperation of 10 years' standing which is to be expanded and deepened. [Text] [East Berlin NEUES DEUTSCHLAND in German 7 Jun 79 p 2 AU]

PRC-YUGOSLAV BROADCASTING AGREEMENT--Belgrade, 19 Jun (XINHUA)--A radio and TV cooperation agreement and a 1979-1980 radio and TV implementation plan between China and Yugoslavia were signed in Skoplje City today with a view to strengthening the relations of friendly cooperation between the two countries. The documents were signed by Jin Zhaohe, leader of the Chinese radio and TV delegation and deputy-director of the Central Broadcasting Administrative Bureau of China, and Stojan Dimovski, president of the Committee for International Cooperation of the Workers Community of the Association of Yugoslav Radio and Television Organizations. Under the agreement, China and Yugoslavia will exchange radio and TV broadcasts and related information, visiting delegations, correspondents, programmers and technicians. They will also cooperate in the preparation of radio and TV broadcasts. [Text] [Beijing XINHUA in English 0935 GMT 20 Jun 79 OW]

JAPANESE MICROWAVE FOR POTOSI—Regional Potosi Development Corporation and the Japanese Mitsubishi Corporation have signed a contract under which the Japanese enterprise will install 1,000 additional telephone lines in Potosi in 4 months and connect the city with the national microwave service in 7 months. Mitsubishi will provide equipment, material and technical assistance for a total of \$472,000. [La Paz Radio Panamericana Network in Spanish 1130 GMT 29 Jun 79 PY]

CSO: 5500

AUSTRALIA

TELECOMMUNICATIONS, TRANSPORT STRIKES WORSEN IN AUSTRALIA

Hong Kong AFP in English 0243 GMT 5 Jul 79 OW

[Text] Canberra, July 5 (AFP)--Telecommunications and public transport strikes are worsening in the eastern states especially.

Australia fears an indefinite breakdown in telephonic, telegraphic and data communication as a result of work bans imposed by technicians who have been supported by the court in complaining that the telecom authorities refuse to negotiate over wage claims.

The authorities are seeking a judgment by the full bench of the arbitration commission about all current telecommunications disputes. No date has been fixed for the hearing. So both union and executive arguments are intensifying, staff is being laid off, union leaders are making stronger threats. The government has appealed for a reexamination of the situation.

In practice regular international circuits are out of business, direct interstate calls by telephone or telex are erratic, telephone calls overseas are delayed indefinitely, but calls are being received inwards.

Meantime New South Wales railways are on strike; Victoria railways are threatening to follow. Cattlemen are withholding stock from sale. There is no date for a parliamentary assembly until late August. Australia is in its worst industrial turmoil for any period since the late 1940's.

CSO: 4220

AUSTRALIA

BROADCASTING EXECUTIVE ADVOCATES USE OF DOMESTIC SATELLITE

Canberra THE AUSTRALIAN in English 14 May 79 p 4

[Text]

MR KERRY Packer has insisted his broadcasting company does not want to own or control any domestic satellite system.

His organisation could not afford to own a satellite, Mr Packer told the A.L.P. National Rural Seminar in Orange, NSW.

He said any organisation, even if it wanted to control a satellite, would be prevented from doing so by existing federal legislation.

"We do not want to control any satellite - all we would want is our fair share of its use," he said. "I don't think that is unreasonable."

Mr Packer's Publishing and Broadcasting Pty Ltd has been foremost in advocating the establishment of a domestic telecommunications satellite system.

A satellite launched over Australia, at a cost of about \$200 million, would allow television and radio as well as telephone calls to be received in remote areas.

Mr Packer said he had told the Federal Government's task force inquiring into a satellite that a consortium of Australian and American interests could provide the finance if the Government could not.

There are 15 such satellites in operation over the American mainland.

Mr Packer said anyone who would deny the right of people in outback areas to the same services as city dwellers were "selfish and self-interested in the extreme"

JOBS FEAR

But the assistant secretary and treasurer of the NSW branch of the Australian Telecommunications Employees Association, Mr Ken Walton, said at least 4000 positions in the rural television industry and about 2000 skilled jobs with Telecom would be lost with the launching of a satellite.

An executive officer of a Victorian rural television station, Regional Television, Mr Nigel Dick, said any slicing of country audiences by the bigger city stations would send many rural TV companies broke.

Mr Dick said he wholeheartedly supported the concept of a satellite but the large city television companies could not be allowed to dominate its use.

Mr Packer said country people were not satisfied with the sort of commercial television they were receiving.

He said Mr Dick's station broadcast 15 minutes of news five nights a week.

"On Saturday and Sunday the town could burn as far as he is concerned," he said.

AUSTRALIA

OFFICIAL TELLS ADVANTAGES OF LANDSAT FOR QUEENSLAND

Brisbane THE COURIER-MAIL in English 8 May 79 p 18

[Text]

QUEENSLAND could be using satellite information by 1980 to predict drought cycles and crop yields.

The State already is using data from the American earth resource satellites (Landsat).

The Survey and Valuation Minister (Mr. Greenwood) said the satellites could be used also for mapping and oil and mineral exploration from their orbits 920 kilometres in space.

Data from the satellites already is being stored in a new Landsat library incorporated in the State Air Photograph library in George Street.

A State Landsat committee spokesman said yesterday: "At the moment, when we want satellite material we have to order from America and it takes a long time.

"When we get the earth station in Australia — at Alice Springs — we will get information on a day-to-day basis."

He said the use of

Landsat information would complement aerial photography. The committee was gearing for the opening of Australia's ground station in 1980.

Queensland would tap into this station.

The spokesman said Landsat information

would help in vegetation studies, enabling authorities to determine the progress of drought conditions.

The authorities would be able to prevent overstocking in areas threatened by drought.

The spokesman said

Queensland and New South Wales were making a joint study to determine whether Landsat could be used also for crop forecasting.

Landsat is used extensively on American and Canadian grain belts to forecast grain yields.

AUSTRALIA

BRIEFS

CAR RADIOS FOR AUSTRALIA--Australia's unique motoring conditions make it essential that car radios be designed specifically for them, according to the people at United Car Radio. It was this belief which led the company, which says it is Victoria's biggest car radio retailer, to have the Eurovox range of radios manufactured and imported. The biggest claim for these radios is their sensitivity. United reckons that the long distances between stations calls for a radio with good long range capability. The Eurovox range also has higher than usual output power to provide the volume necessary in the noisy environment often found inside the Australian car either at speed or on rough roads. The top Eurovox model has not only got the long range medium wave receiver as well as its FM capability and an output of seven watts per channel, but the cassette section features Dolby noise reduction. This model, the 9012R, is priced at \$459. Other models, all with stereo cassette players and power outputs of at least six watts per channel, start at a recommended price of \$156. [Text] [Melbourne: THE AGE in English 10 May 79, Supp., p 14]

CSO: 5500

INDIA

ONGC TELECOM LINK PROJECT EXPECTED BY MAY 1980

Madras THE HINDU 23 Jun 79 p 6

[Text] NEW DELHI, June 22. "Project Titan," for setting up telecommunication and telemetry links between the Oil and Natural Gas Commission's Bombay High off-shore oil fields and the shore terminal at Uran is expected to be completed by May 1980. It is being implemented by the Radar Control Project Office (RCPO) of the Defence Ministry at an estimated cost of about Rs. 12 crores.

There has been some delay in the progress of Project Titan resulting from the modifications to the "Bombay High North" (BHN) project for which the ONGC has given the contract to Oceanic Contractors of U.S. The BHN platforms, some of which are being built by Mazagaon Docks, had to be modified and the modification programme requires importation of some barges from the U.S. RCPO, which was hoping to have some of the telemetry equipment installed on the BHN earlier for testing, had to reschedule its operations on account of the delay in the modification programme.

The hardware for Project Titan has been supplied by EMR Telemetry of Sarasota, U.S., while the software is likely to be acquired from indigenous sources. Another U.S. firm, Motorola of Chicago was also chosen for the supply of telemetry equipment to the project.

There appears to have been some minor upset because the frequencies allotted for the telecommunication link which will be routed through space satellites--first the INTELSAT of U.S. and later the Indian National Satellite--by the wireless co-ordination wing is in the 600 megahertz range. Motorola does not have equipment to suit these frequencies and RCPO is now exploring the possibilities of securing it either from indigenous sources or abroad. It is having discussions with the Indian Telephone Industries, Electronic Corporation of India and other public and private sector units. If it is not possible to get the equipment indigenously, it may have to be imported from abroad--probably from Japan or the U.S.

CSO: 5500

PALAPA SATELLITE PROMOTES REGIONAL COOPERATION

Kuala Lumpur BUSINESS TIMES in English 17 May 79 p 24

[Excerpts]

THE hope that Indonesia's Palapa system would become the Asean-wide satellite communication system took a big step towards reality when the first official telephone call between Kuala Lumpur and Jakarta via the satellite was made last week.

The last hurdle of legal clearance from the International Telecommunication Satellite Organisation (Intelsat), the existing organisation for satellite supervision to which both countries belong, was cleared when the use of the Palapa for regional communications was approved at the Intelsat meeting in Manila last April.

With this link-up, Malaysia now joins the Philippines, which is already using the Palapa as its domestic satellite, and Thailand, which has signed a similar memorandum of understanding on the use of the satellite.

The satellite is capable of transmitting and receiving telephone calls between Kuala Lumpur and Jakarta, Kuala Lumpur and Alor Star (which has an earth station), and Alor Star and Jakarta as well as transmitting TV programmes between the three places.

Other capabilities of the Palapa system are telex communications as well as computer data and FM transmissions.

The facilities of the Palapa satellite will be used to link up Peninsular Malaysia and Sabah and Sarawak to channel TV signals and other forms of communications in addition to its use in Malaysia's domestic communication network. Energy, Telecommunications and Post Minister Leo Moggie said when he signed the memorandum of understanding for the leasing of Palapa in Jakarta on March 30 this year.

Palapa, however, would not replace Intelsat for international communications as it would only be used for domestic and regional communication.

The first generation of Palapa satellites have been in operation since August 1976.

Indonesia now has 42 operating ground stations and a number of TV terminals, which are capable of receiving only, spread throughout the country. With the microwave backbone systems, this constitutes its national telecommunications network, linking provincial centres and other areas. Connecting links, called "spur routes," include smaller towns in the network.

Beyond national boundaries, the system has been able to promote Asean regional cooperation.

The Philippines has leased one-and-a-half transponders from January 1979 for its domestic traffic and TV broadcasts. Thailand and Malaysia are now building ground stations for access to the Palapa system.

Given the benefits that the system can bring and its importance to the Asean five, the Indonesian government has concluded that further development of the system is required.

Satellites have a finite life time and need to be replaced accordingly. So the Indonesian government has been actively planning the second generation of satellites since mid-1977.

The end of the operational life of Palapa-A satellites are 1983 and 1984. The launch of Palapa-B1 satellites should take place at mid-1983 to allow a one-year period of operational transition and to cope with possible delays in the manufacture and launch programmes.

Palapa-B satellites will have a seven-year design life time expected to operate up to the year 1990. Their capacity takes into account the requirements up to that year, that is a planning period of 13 years.

The manufacture of a satellite takes 30 to 36 months and, as such, the latest date for the award of the contract for Palapa-B satellites is the end of 1979.

Although time is short, the programme is not behind schedule. The advance publication by the International Frequency Registration Board has been made and inter-system coordination is in progress. With no significant problems anticipated, the manufacture, launch and operational transition of Palapa-B is expected to be on schedule.

The present system of Palapa-A operates with idle transponders as spares. Palapa-B1 satellites will be capable of carrying the traffic and its growth of Palapa-A1 and A2 should be launched at a later year as appropriate to accommodate traffic growth, if the growth rate is higher than the expected 15 per cent.

The Palapa-B satellites will also be more sensitive to ensure better service quality and less expensive ground stations. It will be designed to work with hundreds of ground stations, and this ground segment cost will be the far bigger part of the whole system's costs.

Battery capacities will be designed for full solar eclipse operation, with the emphasis on the continuity of services rather than importing the latest technology.

Indonesia hopes that most of the US\$40 million

(about \$123 million) it will spend to launch the Palapa-B satellites will be recovered by renting facilities to other Asean members. Nine of the transponders — transmitters and responders — to be carried by the Palapa domestic twin satellites would be rented out to Thailand, the Philippines and Malaysia.

At US\$693,000 per transponder per year, the lease of facilities would bring in more than US\$43 million in the expected seven-year life span of the satellites.

The new satellites, to be launched sometime in 1982 from Cape Kennedy, would be put in synchronous orbits 22,500 miles over Kalimantan Island.

From that height, all five Asean countries could be covered by the satellites reflecting antennas. The satellites would be able to provide round-the-clock voice and picture transmissions regardless of weather conditions.

Sanahiba Electronics Bhd., a Kuala Lumpur-based bumiputra company of the Melawar group, is the appointed sole distributor in Malaysia for earth stations using the Palapa system. Each earth station is estimated to cost between \$300,000 and \$1 million.

While the advent of the Palapa system presents an important adjunct to the Asean regional communications network, the concept of a uniquely regional network was structured on under-water cables initially.

This concept was first mooted in March 1976 when the Asean Commit-

tee on Land Transportation and Telecommunication, as it was then called, agreed to study the ramifications of such a project.

The groundwork was completed during subsequent meetings in Kuala Lumpur and Bangkok in 1976 and, at the end of the year, the relevant agencies of the Philippines and Singapore — Eastern Telecommunications and the Telecommunications Authority of Singapore — signed a memorandum of understanding to construct a 1,450-nautical-mile co-axial cable between Currimaio, Ilocos North, in Northern Luzon and Singapore.

The \$113 million link was completed in the middle of last year and carries 1,350 telephone circuits.

The submarine cable link on the Thai-Malaysian-Singaporean section of the network is expected to cost an estimated \$80 million, for which talks are now at an advanced stage, according to the Director of External Services of Telecoms, Mr Xavier Goh Khen Wah.

The project, which will join Singapore to Kuantan to Bangkok, will carry a total of 980 links (480 circuits for each segment) stretching a total of 779 nautical miles.

Survey work for the line has been completed by a Japanese firm and the tender awarded to the Nippon Electric Co. (NEC) of Japan. The cable laying ship, the KDD Maru, will be employed, Mr Goh said.

The Indonesia-Singapore section of the network, carrying 480 circuits to be installed over 490 nautical miles,

is now expected to cost US\$33 million (about \$70.4 million) instead of the \$50 million originally estimated.

The laying of the cable is expected to be completed by April 1980 and would be operational by June.

The agreement for the construction and maintenance of this submarine cable link, the second part of the Asean submarine cable communication system, was signed by the five Asean countries on April 28.

The line is jointly owned by Indonesia, with a majority share of 50.15 per cent, Singapore 21.9 per cent, Malaysia 2.9 per cent, as well as Thailand and the Philippines, 1.9 per cent each, with the Kokusai Denshin Denwa Co. Ltd. of Japan owning 10 per cent, the British Cable and Wireless of Hong Kong 6.25 per cent and the Overseas Telecommunications Commission of Australia, 5 per cent.

The laying of the cable, which connects Ancol, Jakarta with Katong, Singapore, will take place in December.

The most costly and longest connection would be the link joining the Philippines and Thailand. It would be 1570 nautical miles on completion and would carry 480 circuits. This link, however, is still tentative as the lighter den-

sity of traffic between the two countries might make the cost prohibitive.

Together with the agreement on the use of the Palapa system, Malaysia and Indonesia also signed a memorandum of understanding on March 31 for the construction of a submarine link between Medan and Penang.

The most visible advantage of the network would be the establishment of direct dialling services between the five capital cities at relatively low tariff. This would be very much an expansion of the Subscriber Trunk Dialling service (STD) between Singapore and Malaysia. This would be a great convenience for the business community.

The cables, capable of carrying all types of telecommunications traffic, including telex, telegram, and data broadcast, is also very useful for the transmission of TV and high frequency broadcasts.

Singapore would most likely act as the central exchange when the network is completed as it is centrally located in the region. The Telecommunications Authority of Singapore is reportedly planning to spread the Asean network even further afield through the proposed ICOM cable between Madras and the island.

JAPAN

BRIEFS

COMPUTER BUY-BACK RESERVES--Japanese computer manufacturers, taking advantage of a recent change in law, are increasing nontaxed computer buy-back reserves from the 20 percent level of JFY 1977 to nearly 30 percent, according to JFY 1978 company reports. (Reprint from 9 May 79 issue of NIKKAN KOGYO SHIMBUN) [Tokyo COMPUTER DIGEST in Japanese Jul 79 p 21]

FIFTH GENERATION COMPUTER--The Ministry of International Trade and Industry has set up a "Fifth Generation Computer Survey Research Committee" to conduct a 2-year study preliminary to setting up an 8-year program for development of fifth generation computers. (Reprint from 23 Apr 79 issue of NIHON KEIZAI SHIMBUN) [Tokyo COMPUTER DIGEST in Japanese Jul 79 p 20]

SOFTWARE ARCHITECTURE COMPUTER--Professor Kuni of the Physics Faculty, Tokyo University, proposes that for fifth generation computer development the usual practice of designing software to fit the hardware be reversed by designing computers in a manner that will facilitate software preparation. To clarify the orientation that development of such a system should take, Professor Kuni will conduct joint research with first-line researchers at the University of Texas, at NASA, and elsewhere during May through September 1979. Professor Kuni holds that the VLSI development program has resulted in the ability to cope with IBM and that if fifth generation computer research is pursued Japan's computer industry will advance greatly and after 10 years move past IBM to become the world leader. (Reprint from 4 May 79 issue of NIHON KEIZAI SHIMBUN) [Tokyo COMPUTER DIGEST in Japanese Jul 79 p 20]

E-BEAM SYSTEM--The Cooperative Research Laboratory of the VLSI Technology Research Association has developed an electron beam system using a field discharge electron gun employing technology used for electron microscopes that can handle line-widths of 0.5 micron. The system is said to be able theoretically to make 1,024 kilobit devices. In practice, dry etching has become a bottleneck. Peripheral technology for the system remains to be developed, and prototype manufacture and practical use will probably require another 2 or 3 years work. (Reprint from 16 May 79 issue of ASAHI SHIMBUN) [Tokyo COMPUTER DIGEST in Japanese Jul 79 p 75]

OPTICAL MEMORY ELEMENT--The Institute of Physical and Chemical Research is scheduled to start collecting data on (Kalkogen) amorphous semiconductor material in JFY 1980, aiming at future development of an optical memory element. (Kalkogen), a combination of silicon, arsenic, and tellurium, has a few-picosecond response time and is being eyed as a material for high-speed arithmetic and optical memory elements. The IPCR intends to use such elements in conjunction with a YAG laser spectral apparatus. Basic electrical characteristics for the material have been ascertained, and Hitachi Ltd, Matsushita Electric Industries, Sony, and 47 other manufacturers have started on development of electrical and electronic devices using it. Osaka University and the Electrotechnical Laboratory, of the Agency of Industrial Science and Technology have been engaged in R&D on the material for some time. (Reprint from 12 May 79 issue of NIHON KOGYO SHIMBUN) [Tokyo COMPUTER DIGEST in Japanese Jul 79 pp 78-79]

WIRING BOARD TECHNOLOGY--Nippon Telegraph and Telephone has test-manufactured an alumina wiring board incorporating heat pipes that has in experiments displayed ability to dissipate heat at a rate 20 times that of a copper wiring board and 400 times that of an ordinary alumina board. These results are expected to lead to greatly increased density of chips on circuit boards. (Reprint from 5 May 79 issue of NIHON KOGYO SHIMBUN) [Tokyo COMPUTER DIGEST in Japanese Jul 79 p 78]

64 KILOBIT RAM--Fujitsu has started shipment of sample 5-volt single power source 64 kilobit RAMS to the United States. (Article reprinted from 30 Apr 79 issue of NIKKAN KOGYO SHIMBUN) Hitachi Ltd on 11 May 79 announced that it had completed a 5-volt single power source 64 kilobit dynamic RAM and would start sample shipment in July, with mass production scheduled to start in early 1980. (Reprint from 12 May 79 issue of NIKKAN KOGYO SHIMBUN) [Tokyo COMPUTER DIGEST in Japanese Jul 79 pp 79-80]

BUBBLE MEMORY--Nippon Electric has established mass production technology for 64 and 135 kilobit magnetic bubble memories and will establish mass production technology for a 256 kilobit bubble memory by year-end 1979. Fujitsu, Hitachi, and now Nippon Electric have established good prospects for commercial production of 256 kilobit bubble memory chips. (Reprint from 28 Apr 79 issue of NIHON KOGYO SHIMBUN) [Tokyo COMPUTER DIGEST in Japanese Jul 79 p 79]

CSO: 5500

SUBMARINE CABLE TO LINK EAST, WEST MALAYSIA

Kuala Lumpur BUSINESS TIMES in English 17 May 79 p 29

[Text]

T H E telecommunications revolution has been and still is a continuing process. In the first place, the network of communications channels has been steadily extended, and this expansion goes on at an ever increasing rate. Today submarine cables are just one of a range of methods of carrying long distance messages and data.

Malaysia's first domestic submarine cable system will be constructed between Cherating in Pahang and Sematan in the First Division of Sarawak. At present these two separate areas are connected by a Tropocaster System of 48 channels between Johore Bharu-Kuching, a domestic satellite system linking Kuantan-Kota Kinabalu with 72 circuits and SEACOM cable from Singapore to Kota Kinabalu with 18 circuits.

The \$64 million submarine system is to be commissioned in February next year just nearly a year from the time the contract for the cable construction was awarded.

The system will facilitate the establishment of subscriber trunk dialling (STD) between Peninsular Malaysia and

Sabah/Sarawak. When fully implemented, the direct dialling will stimulate closer economic activities and reinforce social integration between the two parts of Malaysia.

This wide band submarine communication cable system shall be able to transmit 1,200 telephone circuits having a designed continuous life of 25 years.

Work on this domestic cable link has started. The station buildings at the landing site of the cable will be ready by August this year. The selected route provides the best compromise between that which is most economical and that which is considered most protected and hazard free.

Before undertaking the survey of the main cable route, it was necessary to determine the landing points. The locations of these were influenced by the security of the approach routes and the preferred siting of the terminals with regard to ease of access to connecting telecommunication facilities.

In Peninsular Malaysia the landing site is in Cherating which is 28 miles north of Kuantan. In Sarawak, the landing is to be at Sematan which is about 70 miles from Kuching.

The total route distance between Cherating and Sematan landings is 883 km. The ocean survey to study the area covered by the route involved the assembling of oceanographic and hydrographic data from many sources.

The data was compiled on charts and contour maps of the sea bed were constructed. From these the provisional

route for survey was selected. An assessment was also made of the degree of hazard from trawling, other man-made intervention and natural causes.

The total length of cable used will be slightly greater than the route length as some slack will be laid in to allow it to

follow the contours of the sea bed and make it easier to raise in the event of a repair being necessary.

It will be made of several different types of cable to suit the conditions of the sea-bed in the sections of the route in which they will be laid. Most of the cable will be buried in the sea bottom; and portions of it will be protected with armouring at the approaches to Cherating and Sematan.

There will be 70 repeaters at various specific intervals of the cable length to compensate for the attenuation suffered by the signal in passing through the cable.

A total of three submerged equalisers are to be provided, one being inserted into the system after certain numbers of repeaters. These equalisers will have fixed values calculated in advance of laying.

The cable will be laid by a cable ship in November 1979 and the repeaters and fixed equalisers will be incorporated into the system during the loading operation.

It will provide extensive cable capacity

and overcome any terrestrial circuit shortage experienced between Peninsular Malaysia and Sabah/Sarawak.

There is every indication that this area has potentially high communications requirements both nationally and internationally.

One of the major problems facing administration, however, is that of satisfying the demands for expanded services while at the same time providing the maximum operational security against service failure.

The answer to this problem of operational security lies in the economic maximisation of route and media diversity. This system offers the opportunity of cable diversity with economy, and has sufficient capacity to meet the requirements within the decade.

— Telecommunications Department.

TELECOMMUNICATIONS SERVICES EXPANDING UNDER THIRD PLAN

Kuala Lumpur BUSINESS TIMES in English 17 May 79 pp 15, 16

[Excerpts]

T E L E . COMMUNICATIONS is an integral part of modernisation and Malaysia can lay claims to a reasonably modern system.

The overriding consideration in the development plans for telecommunications, as with all the other services in Malaysia at present, is how they fit in with the New Economic Policy (NEP), and the Third Malaysia Plan (TMP).

As part of the physical infrastructure of the country, the development of telecommunications and other social services figure as one of the major goals of the NEP.

The main guiding principle for the telecommunication programmes under the TMP is that they should be geared to meet projected demands created by developments in industry, commerce and housing.

Hence, the most important projects to be implemented under the Plan period are:

- installation of new crossbar and electronic telephone exchanges, supplemented by mobile exchanges to overcome short-term delays;

- installation of microwave, VHF, UHF, coaxial and pulse code modulation (PCM) systems;

- laying of a submarine cable system between Peninsular Malaysia, Sabah and Sarawak;

- expansion of the telex networks;

- establishment of a public data switching network to cater for organisations using computers or modern electric business machines;

- construction of the second satellite communication earth station at Kuantan for operation with the Pacific Ocean satellite; and

- Expansion of the telecommunications network of the Asean countries.

The Telecommunications Department originally bidded for a sum of \$2.150 million in 1975 for its proposed projects under the TMP. However, only \$1.080 was approved.

To reduce the number of deferred applications for telephones, 396,000 new exchange lines have been planned for the TMP period. Of this 334,000 will be in Peninsular Malaysia. In addition the subscribers' network will be expanded. A total of 432,600 cable pairs, to be used mainly for telephone and telegraph services, will be installed in the various regions.

The demand for computerised telex services is also expected to grow by 30 to 50 per cent a year. To meet this demand additional telex and data services will be provided.

With the completion of these programmes, the

number of subscribers will increase to 149,439, thus meeting 42.9 per cent of the total demand.

The Plan period will also see the expansion of the trunk and junction network. The total circuit requirements are expected to increase by 15 to 20 per cent a year.

To meet this demand, the STD system will be expanded throughout the country. This will involve the extension of PCM systems, coaxial cable systems, microwave radio systems, as well as aerial and underground cables and overhead carrier systems.

The need for telecommunication links with the region and the rest of the world have not been ignored by the TMP. Under the Plan period existing overseas communication links will be expanded in line with the growing cultural, diplomatic and economic tie between Malaysia and the outside world.

A total of 160 satellite earth circuits, covering 16 countries, will be established. The main projects to be implemented under this programme are:

- a second satellite earth station at Kuantan beamed towards the Pacific Ocean and the expansion of the existing earth station at Kuantan;

- the laying of an intra-Malaysia sub-

marine cable between Peninsular Malaysia, Sabah and Sarawak;

- expansion of the microwave link and multiplex equipment at the Kuantan earth station; and

- participation in the Asean telecommunication network.

An allocation of \$1.1 billion had been earmarked for these projects; of the amount \$937 million will be for Peninsular Malaysia, \$62 million for Sarawak and \$60 million for Sabah.

The projects planned under the TMP are no doubt impressive, but it is not the planned projects that one looks for but the achievements and the fulfilment of these projects.

In this respect, the Telecommunications Department can be said to have achieved satisfactory results in the first three years of the Plan

despite the many setbacks such as insufficient funds, manpower and operating difficulties which manifest themselves in the numerous public complaints.

The telephone exchange capacity increased with the installation of about 300,000 new lines, of which 260,000 were in Peninsular Malaysia, 14,000 in Sabah and 26,000 in

Sarawak. This total accounted for half the Plan's target of 600,000 lines. The subscribers' network, comprising overhead routes and connections of telephone subscribers, expanded with the completion of an additional 102,000 direct exchange lines of which 158 lines were for rural call office.

Further approximately 337,000 additional underground cable pairs

were also installed in Peninsular Malaysia, 16,000 in Sabah and 33,000 in Sarawak. This total accounted for 33.2 per cent of the target of 1,163,900 cable pairs. The programme for the extension of the STD system was expanded with the completion of about 400,000 additional circuit miles of long distance network, an achievement of 62 per cent of the planned physical target.

A contract was signed in December 1978 for the installation of the standard "A" type satellite earth station in Malacca. This station will enable the existing overseas communication link to be expanded and new links established to provide about 160 satellite earth circuits covering about 18 countries. The Kuantan-Kuching submarine cable survey was completed and contract was awarded in December 1978.

The cable system, when completed, would have a capacity of 1,200 channels and would cater for the increasing demand for telecommunications services. In addition, it would introduce STD between Peninsular Malaysia, Sabah and Sarawak.

Malaysia also participated in the expansion programme of the telecommunications network of the Asean. The first phase, involving the laying of the Philippines-Singapore submarine cable, was

completed in late 1978 while the second phase between Indonesia and Singapore was under construction and scheduled for completion by 1980. Malaysia has contributed 10 per cent of the capital cost of the former and would contribute three per cent of the latter.

The Malaysia-Thailand link of the circuit costing some US\$14 million will be in service in 1981. When the whole project is completed by 1983, all the five nations will be interlinked by cable and satellite.

This link will not be limited to the Asean Five. For example, the westward extension of the cable system within the Commonwealth group is also in the planning stage. Designated IOCOM (Indian Ocean Communication Cable System) the cable will link Malaysia with India, Sri Lanka and eventually with the Arabian Gulf and East Africa. Phase One of this project is under discussion and is expected to consist of a 480 channel system linking Madras and Penang. The completion date is set for 1980.

A memorandum of understanding to proceed with the laying of the \$115 million submarine telecommunications cable between Penang and India was signed last month.

On the satellite front, Malaysia has set up an earth station in Kuantan which provides links to Indonesia, the Indian sub-continent, Africa and Europe. Automatic telex exchanges are available in Kuala Lumpur, Kuching and Kota Kinabalu and Penang. There are also microwave links between Malaysia and Singapore and one between Malaysia and Thailand.

Automatic and manual telex services to another 20 countries have been introduced in April this year. The automatic

telex calls are to 12 countries and manual calls to eight others.

The automatic is to Cameroon, Costa Rica, Libya, Maldives Island, Mauritius, Netherland, Antilles, Niger, Senegal, Seychelles, Tonga, Venezuela, Virgin Island (US).

The manual calls to Afghanistan, Chad, Guinea, Liberia, Mali, Mauritania, Sierra Leone and Somalia.

The Telecommunications Department has also modernised its telex services with the installation of a modern network of telex switching centres. The number of telex subscribers has grown by 129 per cent from 998 in 1975 to 2,286 by the first

quarter of 1979. A total of 2,500 new telex subscribers are expected to be installed under the TMP.

The direct trunk dialling system from Kuala Lumpur to the United Kingdom and Europe was being tested. Direct trunk dialling to six major cities in the world is being set up to facilitate the establishment of the multi-commodity exchange in Kuala Lumpur.

The cities are London, Hong Kong, Tokyo, Canberra, Melbourne and Sydney.

The Malaysian telecommunications system is unique unto itself. Unlike the tele-

communication system of most other countries, in Malaysia it is operated by the government as a public utility and not as a commercial enterprise.

This explains why Malaysians enjoy the cheapest telephone service in the world. The government subsidises every telephone that is installed to the amount of \$8,000 and the installation fee of \$25 in Malaysia is said to be the lowest when compared to that of 20 other countries.

In Japan, where the fees are the highest, the charge is \$2,280 while in a median country like the United Kingdom, the rate is in the region of \$250.

No wonder the telephone is so popular in Malaysia, there being an average of 28 telephones per thousand in Malaysia as compared to three per thousand in Indonesia and eight per thousand in Thailand.

It is expected that at the end of the TMP period, there will be an overall average of 56 telephones per thousand in Malaysia. In Kuala Lumpur itself, the local average will in fact be 260.

SHANGHAI SCORES 'MAJOR ACHIEVEMENT' IN COMPUTER RESEARCH

Shanghai City Service in Mandarin 1130 GMT 19 Jun 79 OW

[Excerpts] Shanghai's scientific research in large-scale integrated circuitry has recently produced another major achievement. After nearly 3 months of tireless research efforts, scientists of the First Research Laboratory of the Shanghai Metallurgical Institute under the Chinese Academy of Sciences has successfully developed an ECL 1024-digit random memory device [suiji cunchuqi 9536 2623 1317 0328 0892], which is more sophisticated in terms of circuit integration. The key research project, which is intended to be presented to the state on the occasion of its founding anniversary, was completed a half year ahead of schedule.

The birth of the ECL 1024-digit memory device marks a new development in China's research and production of large-scale integrated circuits. It has created conditions for accelerated development of electronic computer technology.

CSO: 5500

SOUTH KOREA

FOREIGN FIRMS TO BID FOR ROK'S MULTI-BILLION DOLLAR ESS NETWORK

Seoul THE KOREA TIMES in English 27 Jun 79 p 8

[Text] A hot business war has flared up among worldwide electronic makers to undertake Korea's immense project for the computerization of the telecommunications system.

Five world-renowned electronic manufacturers have applied to bid for a multi-billion dollar project to install electronic switching systems (ESS) in the nation's telecommunications network by 1984.

The five makers, whose applications have been submitted to the Ministry of Communications, are Western Electric, General Telephone and Electric Co., both of the United States; Siemens of West Germany; and Nippon Electric Co and Fujitsu, both of Japan.

The project, the second of its kind after the first project for installation of the computer-controlled systems, which went to the International Telephone and Telegraph Corp (ITT) last year, is the largest in terms of investment scale.

Scores of staff members from the top electronic makers of the world have swarmed to Seoul and are contacting the Communications Ministry and other government officials to get the windfall.

Communications Minister Lee Jae-sul has been visited every day by presidents or staff members of the companies since the ministry closed applications for its ESS project early last week.

The computer-controlled telecommunications system is now being installed for the first time by the ITT at the Yongdong and Tangsan Telephone Offices with completion scheduled for the end of this year.

Communications Ministry officials revealed that 10,000 lines at each of the two offices could be operated by the ESS from next year.

The Ministry of Communications had contracted with the Bell Telephone Manufacturing Co. (BTM), an electronic firm belonging to the ITT in Belgium, in June last year to install computer-controlled systems at the Yongdong and Tangsan offices as a model case and had originally planned to have the firm continue with the computerization project.

Communications Ministry officials revealed that in view of the pressing need to expand the nation's telecommunications network under tremendously-increasing demand, the ministry had to engage another electronic maker besides the ITT.

One of the five electronic makers which will be chosen in the Communications Ministry bidding is to undertake the project to install 1,740,000 ESS-controlled lines by 1984.

One of the reasons for the ministry to seek another partner in the nation's computerization project is to block the monopoly of the ITT.

Some ministry officials said that the ITT had not properly heeded the original contract in the course of carrying out the project.

According to them, the ITT had contracted with the Ministry of Communications to install a line for \$305, but the ITT demanded an increase of contract money, citing rising costs.

The ITT was originally to complete the installation of the first 10,000 lines each at the Yongdong and Tangsan Telephone Offices by this September. But ministry officials revealed that it would take two or three months more until completion.

The ministry plans to install a total of 760,000 lines including 500,000 ESS-controlled lines next year.

Of the 500,000 ESS-controlled lines, 430,000 will be installed by the ITT and the remaining 70,000 by one of the five firms which will be chosen in the ministry bidding.

The portion to be undertaken by the firms other than the ITT will be increased sharply in later years.

The ministry plans to replace completely the current electro-magnetic systems with computer-controlled ones by the 1984.

As the ministry has turned its eyes to other business, the ITT seems to be somewhat upset.

Some staff members of the ITT recently contacted the Communications Ministry officials to discuss the recent bidding for selection of a second electronic maker.

BRIEFS

NEWS SERVICE AGREEMENT -New York, 28 June (HAPTONG)—South Korea's leading broadcasting network, MBC, and CBS of the United States today signed an agreement on news service and exchanges. MBC President Yi Hwan-Ui and CBS Vice President for Resources Development and Production Joseph Bellon initialed the agreement documents on cooperation between the two major broadcasting media of both countries at the CBS headquarters in Manhattan. Under this agreement, MBC will regularly receive video cassettes on news events from CBS and both networks can use each other's facilities whenever necessary. [Text] [Seoul HAPTONG in English 0300 GMT 29 Jun 79 SK]

CSO: 4120

SRI LANKA

'TANJUG' REPORTS ON INFORMATION FIELD

Belgrade TANJUG in English 1222 GMT 10 Jun 79 LD

[Pool item]

[Text] Colombo, June 10 (TANJUG)--The political document of the non-aligned Coordinating Bureau's ministerial session, which ended here today, gives prominence to cooperation of the non-aligned in the field of information. The political document stresses the role of the non-aligned in changing the existing world information order. The document states particular satisfaction with the results to date in cooperation among the non-aligned in the field of information. The assessment is primarily based on a report presented by India as chairman of the coordinating committee of the non-aligned countries' news-agency pool.

The Colombo session economic document welcomes the recommendations for drastically reducing communications rates for non-aligned countries' news agencies. The reduction of corresponding communications rates is assessed as an extremely important condition for a more effective and comprehensive information exchange among the non-aligned countries.

CSO: 5500

INTERNATIONAL AFFAIRS

BRIEFS

POLAND-GDR MEDIA COOPERATION--Ambassador Wolfgang Meyer, head of the Press Department of the GDR Ministry of Foreign Affairs, has visited Poland at the invitation of the Polish Ministry of Foreign Affairs. During the visit the sides appraised the implementation of cooperation in the area of press and information and signed an accord on 1979-80 cooperation between the Press and Information Department of the GDR Ministry of Foreign Affairs and the Press and Cultural and Scientific Cooperation Department of the Polish Ministry of Foreign Affairs. Ambassador Meyer was received by Michal Atlas, deputy head of the PZPR Central Committee Department of the Press, Radio and Television, and by Vice Minister of Foreign Affairs Marian Dmochowski and met with PZPR leaderships of Plock and Wloclawek voivodships. [Text] [Warsaw TRYBUNA LUDU in Polish 18 Jun 79 p 4 AU]

CSO: 5500

POLAND

CONVENTION ON MARITIME SATELLITE COMMUNICATIONS RATIFIED

Warsaw PAP in English 1324 GMT 27 Jun 79 LD

[Text] Warsaw, 27 June, PAP--The Council of State of Poland today ratified a convention on the establishment of the International Maritime Satellite Communications Organization (INMARSAT). The aim of the organization is to provide an international system of maritime communications with the help of artificial satellites.

Poland's accession to INMARSAT will create possibilities for more effective utilization of Polish merchant and fishing fleet and increase the navigation safety.

The Council of State also announced the withdrawal by the end of the present year from the 1949 convention on fisheries in the north-western Atlantic and the six protocols attached to it as the questions of further (?communication) in that area are to be regulated by a new convention.

CSO: 5500

BRIEFS

CENTRAL COMMITTEE MEDIA SESSION--On 21 June chief editors and first secretaries of party organizations in mass medias held a session in PZPR Central Committee headquarters to discuss current tasks of mass media. Jerzy Lukaszewicz, PZPR Politburo candidate member and Central Committee secretary, who chaired the session, drew attention to the key problems that should be tackled by mass media in the 35th year of People's Poland and on the 40th anniversary of Hitlerite Germany's aggression against Poland. He also devoted much attention to the media tasks in connection with the coming eighth party congress. [Warsaw TRYBUNA LUDU in Polish 22 Jun 79 p 4 AU]

CSO: 5500

ROMANIA

BRIEFS

MANUFACTURE OF MINICOMPUTERS--Romania is manufacturing new minicomputers under the trade name "Coral" designed for various purposes such as: economic administration, telereley and teleprocessing of data, industrial processes and machine tools control. The first of the two models manufactured is "Coral" 4 091 with a 64 kildoctet [kildocteti] operational memory and a speed of 350,000 operations/second. "Coral" 4 011 has a greater capacity, with a 256 kildoctet memory and a speed of 600,000 operations/second. [Bucharest SCINTEIA in Romanian 20 Jun 79 p 5 AU]

CSO: 5500

BRIEFS

CONSTITUTION CLAUSE ON MEDIA--Lima, 9 Jun (LATIN)--The constituent assembly last night agreed to include a clause in the constitution declaring it a crime to close and suppress the country's communications media. The paragraph which was approved states that an action which closes any organ of expression and prevents its free circulation is a crime. The assembly which believes that it will be able to approve the new constitution within 8 days, also established that the spoken or written press cannot be exclusively owned, monopolized or controlled by the state or by private concerns, directly or indirectly. [Excerpt] [Buenos Aires LATIN in Spanish 1936 GMT 9 Jun 79 PA]

CSO: 5500

MINISTER OF INFORMATION ON NONALINED BROADCASTING

Algiers EL MOUDJAHID in French 4 Jun 79 p 2

[Text] Mr Abdelhamid Mehri, member of the Central Committee, minister of information and culture, made an important speech at the 4th meeting of broadcasting organizations of nonalined countries. Here is the text of his speech:

Mr President,

Excellencies,

Heads and members of sister and friendly delegations,

Ladies and gentlemen,

It is my pleasure to welcome you to Algeria, which has the honor of hosting the 4th meeting of the committee for cooperation of broadcasters from non-aligned countries. I wish you a pleasant stay among us. You are the guests of a people who entertains a deep friendship toward the peoples and countries of the movement which joins us and gives proof of adherence to the principles of this movement. Similarly, I want to express to you my satisfaction in opening these meetings to wish full success. I also hope that you will conclude your work by decisions which will consolidate the important place that this nonaligned movement occupies in international relations. I also hope that these decisions will contribute to expanding the field of cooperation in this family of broadcasting organizations which assume a great responsibility in the field of information at the national and international levels.

This session takes on a specific importance. It is being held on the eve of the meeting of the Coordination Bureau and before the great even constituted by the summit of nonaligned countries to be held next September in the Cuban capital. The approach of these two meetings shows the political and technical importance of your debates, which will be undoubtedly held at the level of our movement's objectives and aspirations.

Thanks to the struggle of the peoples of the Third World, the nonaligned movement has been able to impose itself in international relations as an efficient agent among agents of progress and peace. It has become an essential instrument in the struggle of developing peoples to establish a fairer economic order, international relations that are more equitable and capable of solving the problems of the world and peace among peoples.

Extreme Importance of the Dialog

Our movement has not stopped developing since Bandoeng, through the meetings of Belgrade, Algiers and Colombo. It has had fruitful results and its activities have translated into common enterprises based on cooperation and aimed at achieving the aspirations and demands of our peoples in the political, economic and cultural domains. Also in this context is inscribed the dialog that we are conducting with the industrialized world. This dialog takes on an extreme importance for us. It is also an experience from which we can profit in the organization of our work and strategies even if this dialog remains dependent upon negative consequences of outmoded mentalities in the domain of international relations, and which have precluded until now the achievement of expected results.

This is the reason why we cannot ignore the atmosphere of crisis which reigns in the relations between developed capitalist countries and developing countries. Neither can we ignore the deterioration of conditions which regulate exchanges between industrialized countries and those still enduring poverty, need, the business of monopolies and exploitation. We cannot ignore the seizure of natural resources in some countries of the Third World, the continued increase of their foreign debt, the exorbitant price that these countries pay for technology. We still observe with regret certain aggressions against the sovereignty and independence of some states, as well as ignorance of the right of peoples of self-determination.

In fact, not a day goes by without our hearing, from the south or the northwest of Africa, from the Middle East, Asia or Latin America, the echoes of the imperialist and neocolonialist obstinacy in their selfish policy based upon the denial of the rights of peoples.

Nevertheless, it is the will of the peoples that remains strongest. This obstinacy can have no other results than reinforcing the nonaligned nations movement and engaging these nations in a firm attitude to confront such a policy. This leads the movement to adhere to unity, cooperation, continued struggle and some tasks imposed by the present international situation, characterized by conflict and defiance.

To Enlighten Public Opinion

The analysis of this situation and the action needed to enlighten public opinion in our countries and the world must occupy a fundamental place at the heart of our media networks since those who have given the allegiance to imperialism have not accustomed us to integrity or objectivity that we

might charge them with dealing with these problems, when we see and hear them every day slandering and adapting events to the politics of domination and exploitation and falsifying the reality in our countries, their achievements and legitimate aspirations.

This is not a discovery for you, since you have already observed this state of affairs in the political declaration which you adopted during your constitutive congress at Sarajevo.

This situation in matters of information and the need for confronting it has created the committee of nonaligned countries broadcasting organizations which you have charted, drawn the program for and begun to give it the first means for expressing their hopes and realizing their aspirations. The mission of this committee has become imperative since the knowledge of the objective realities of our modern world and the need for adapting to them, the rapid and precise broadcast of information constitute the first means for enlightening public opinion in the developed countries as well as in the developing countries.

The intergovernmental council for coordinating information in our movement and its organizations has specified their ideas, which it is useless to stress. The most important one is the unity of action which has crystallized in different circumstances thanks to what you have chosen as activity during your previous sessions. Unity of action is the only means likely to guarantee overcoming the difficulties and destroying the monopolies which actively dominate the international system in the field of information.

You have already started working in this sense, our evaluation elements reinforce our conviction that your efforts will succeed in producing effective technical and political results, as well as reinforcing our faith in the victory of our legitimate cause.

A Distribution of Frequency Networks on the Basis of Justice and Equality

The common starting point on which you have agreed in order to unify our countries positions in preparation for the coming world administrative conference on broadcasting, the technical options in the matter of equipment which you are going to study in order to accelerate the broadcast of information and cultural programs through the most modern means, the plans for training personnel in the different specialties, the projects for creating centers and exchange banks of programs and gathering the means likely to insure a common coverage of events which interest us and our movement first of all. Those are achievements which show the advances we have already made toward coordinating all the organizations in order to impose and enlarge the nonaligned movement and its principles in the field of information and establish an information system at the service of justice and peace.

In its last meeting at Lome, where it reviewed the activity of coordinating information organizations for the nonaligned movement, the intergovernmental

council showed the diversity and seriousness of the provisions unanimously taken by its members, and stressed the positive character of these provisions and their effectiveness in broadcasting the movement's positions at the heart of international organizations. The works of the last UNESCO conference and the texts adopted by the United Nations concerning information problems result from this work from which we expect other positive results in the future.

Some of these results will arise from the world administrative broadcasting conference where those responsible for broadcasting will have to examine the distribution of frequency networks and the equatorial orbit, which are among the limited natural resources monopolized by the industrial countries. These must be distributed among all on the basis of justice and equality. On this matter I would like to recall with satisfaction that the last congress at Yaounde, where the managements of communications and other concerned services participated, marked a new step toward coordinating our countries to form a united front at the next administrative conference.

To Insure Broadcasting Independence in Production and Broadcasting

Our old and new broadcasting organizations remain confronted by a lack of equipment which accents the negative aspects resulting from the unequal distribution of frequencies to which they have a right in order to broadcast information and culture under acceptable technical conditions. The domination of frequency networks by large enterprises at the service of a cultural policy has nothing to do with the interests of nonaligned countries. This explains that one might want to leave the doors open to industrialized countries in order that they continue to monopolize the ideological, political and cultural instruments which insure their influence on world economy. [Sentence as published]

Moreover, the revision of the distribution of frequencies is a strategic question which requires permanent interest. The road toward achieving decisive results in this field could be long and difficult. That will demand carrying out numerous projects and a grandiose action in order to attain the objectives that have been set. Anyway, the most important one has been the political will which has crystallized in the agreement on the fundamental questions and in the elaboration of a precise program of action.

The political tasks connected with the present situation incite us to redouble our efforts in order to develop our energies and capabilities. Outfitting our broadcasting stations in order to insure independence in producing and broadcasting under good technical conditions is an objective which deserves priority and polarization of our worries and efforts. Non-aligned countries possess the resources and capabilities which can contribute to such a project in collaboration with the international organizations which expressed their inclination to cooperate.

Make Information a Tool To Lead the Way for Progressive Humanity

Gentlemen,

You will certainly have other questions to discuss which are no less important than those which I have just set forth. There is only one other important question I would like to talk about before finishing my speech. It is a question connected with the movements of liberation which we must morally and materially support until they attain their objectives which, by the way, are ours since our sovereignty and independence will remain threatened as long as even one people in this world continues to endure the yoke of colonialism and slavery.

The role of the nonaligned countries' organs of information will be precisely the one which will permit us to use all our potential to bring about the success of these peoples' cause.

The world in which we live today is characterized by swiftness and the conflict between an outmoded order and a fair order to which we aspire. Information constitutes, in this scheme, a formidable weapon which the industrialized countries exploit shamelessly against us. That is the reason why we will have to work in order to make that weapon a tool of knowledge and recognition at the service of the peoples' interests, the success of right and cultural and economic national liberation, a tool which leads the way of progressive humanity toward a new order to justice and peace.

Those are the objectives for which we will have to struggle and I am convinced that your efforts will contribute to set the course which will permit achieving them.

Once again I wish you full success in reaffirming Algiers loyalty to the principles and ends of the nonaligned movement.

9341

CSO: 5500

BRIEFS

COMMUNICATIONS BETWEEN IRAQ AND KUWAIT--Baghdad, 18 June--Iraq and Kuwait have agreed on extending the microwave system between Basrah and Kuwait to its widest attainable capacity of 960 channels by the addition of 180 channels. This agreement was reached because of the increased telephonic traffic between both countries. This was announced yesterday during dual meetings between the Directorates of Wire and Wireless Communications of both countries. The Iraqi side was led by Mr 'Abd-al-Sinar Firman, chief of the Public Telephone, Telegraph, and Mail Organization, while the Kuwaiti side was chaired by Mr 'Abdallah Mubarak al-Sayih, deputy of the Ministry of Communications, Technical Affairs Section. The meetings which lasted 3 days discussed avenues for developing telex, telephone and telegraph communications and the systemization of their utilization. They also discussed the requirements for joining the two nations with a coaxial cable. [Excerpt] [Baghdad AL-JUMHURIYAH in Arabic 18 Jun 79 p 4]

CSO: 5500

SATELLITE COMMUNICATIONS TO BE OPERATIONAL IN JUNE

Addis Ababa THE ETHIOPIAN HERALD in English 3 Jun 79 p 5

[Text]

ADDIS ABABA (EH) — Ethiopia's satellite communications is to become operational this month, according to a newsletter issued by the Telecommunication Services of Ethiopia.

In this connection, relating the historical development of telecommunications in Ethiopia, the newsletter pointed out that the first telephone service was introduced in 1897 with the first exchanges installed between Addis Ababa and Dire Dawa, later to be introduced to other towns during the same period. And with Ethiopia becoming a member of the International Telecommunications Union (ITU) in 1932, HF radio communication began in 1933 with the outside world.

These initial developments, the newsletter explained, were cut short of moving ahead due to the fascist invasion of Ethiopia until victory during the 1940s when the task of reconstruction began and the Telecommunication Service was establish-

ed in 1953 to enhance these services.

After its creation, the agency improved its services with what was available and extended its facilities by introducing new ones, the letter stated.

It added that a coast station was established in the port of Asseb in 1960 to render ship-to-Shore radio telegraph and telephone services, while telex, picture transmission service and voice cast facilities were introduced in 1963 to be followed by additional coast station constructed in Asmara in 1970. It further pointed out that Microwave System and subscribes trunk dialling (STD) facilities were introduced between Asmara and the Port of Massawa for the first time in 1968. Further, Microwave facilities were also established in 1973 linking the capital with Dessie, Asmara, Dobre Zeit, and expanding it to Nazareth, Dire Dawa, Harar and Jimma in 1975.

Future Plans

The Newsletter added that such services are expected to be expanded to Gondar, Bahar Dar, Debre Marcos, Nekemti, Agaro, Awassa and Shashemene in the early 1980s when the network under construction is complete.

In the area of international links, the newsletter stated that high frequency radio telephone and telegraph transmissions have been established and that satellite communication will be operational this month.

Telephone Services

According to the newsletter, there are 371 exchanges as at December 1978, of which eighteen are automatic exchanges, 307 manual and forty-seven pay stations. There are 60,000 subscriber lines in telephone services and 80,000 telephone sets. It said that 85 per cent of the subscribers are connected to automatic exchanges with 81 per cent of the total having subscriber trunk dialling facilities through crossbar exchanges for the major part of the switching network.

There are seven telecommunication regions, of which six are interconnected with the capital and the seventh is expected to become operational in the early 1980s. Three of the

seven microwave routes are designed to accommodate international traffic with the Northern and Eastern sub-regions of PANAFTEL network, the newsletter indicated.

The newsletter revealed that there are telex services in four major cities — Addis Ababa, Amara, Dire Dawa and Asseb with telex subscribers numbering 347 as at December 1978. As inland telegraph and international telephone services are concerned, the newsletter stated that efforts are being made to improve telegraph services, while in the international some Ethiopia has telephone services with sixteen countries. Ethiopia also has direct telex links with nine countries through which connection could be had with almost every country in the world. There are also fourteen countries which are served with direct international telegraph links, while telegrams could be sent to all countries directly or via intermediary connections, it said.

It also noted that voice post, telephoto, leased circuit and ship-to-shore radio telegraph and telephone are some of the growing services of the Telecommunication Service of Ethiopia.

RADIO NETHERLANDS TECHNICAL AID REPORTED

Tananarive MADAGASCAR-MATIN in French 23 May 79 pp 1, 6

[Text] Tananarive--At 1100 yesterday Mr Christian Remi Richard, minister of foreign affairs, and Mr Van Wijngaarden, director of Radio Netherlands, signed an exchange of letters which follows the proposed codicil to the 31 Oct 67 treaty between the Malagasy Republic and Stichting Radio Netherlands Werldomroep.

The Malagasy Republic's chief of diplomacy, who was surrounded on this occasion by his close associates and some representatives of the Postal and Telecommunications Ministry and of Malagasy Radio-Television (MR), took the floor and emphasized that the first paragraph of this codicil stipulates that Radio Netherlands is returning in advance the land and buildings at Sabotsy-Namehana which is presently the receiving station and technical center, insured at a value of 110 million FMG. It is also stipulated that Radio Netherlands will take the responsibility for: the installation and delivery of an FM transmitter at Anosy; the delivery and installation of medium wavelength relays at Ihosy, Manakara, Ambositra, and Antsohihy.

The total worth of these installations is estimated at 10 million FMG to which must be added the costs of Dutch technical assistance, bringing the total operation cost to 145 million FMG, which represents the gift from the Netherlands to the Malagasy Republic.

Promise Kept

It is not necessary to talk about the importance of radio, Mr Christian Remi Richard continued, especially for a developing country that is also undergoing full revolutionary alteration, such as Madagascar.

I want quite simply to take the opportunity to tell you that Radio Netherlands' advance return of the Sabotsy-Namehana station is a friendly gesture. In fact, Radio Netherlands has kept its promise. Also, in the

name of the Malagasy Republic, I would ask you to transmit our recognition and our thanks to the government of the Netherlands. Our recognition is also addressed to Radio Netherlands Wereldomroep, who has brought about the realization of this project through its continued technical assistance.

Height of Cooperation

As for Mr Wijngaarden, he stated that it is a great pleasure and also an honor for him to take the floor at a time which can be considered the height of cooperation between MR and Radio Netherlands. "This cooperation had already been foreseen during the installation of the Radio Netherlands relay station in Madagascar and because of the importance of national broadcasting, has been able to further develop in the past years."

"I cite the example of the success of MR and Radio Netherlands technicians in adapting the 100 KW transmitter at Fenoarivo for better short wave reception in Madagascar. Another example is that of putting some AM relay stations into operation at Antsirabe, Maintirano, Morondava, and Nosy-Be."

"Unfortunately, this technical cooperation has been limited to small projects because Radio Netherlands, a private foundation, does not have sufficient funds to carry out some more important projects. One of these projects is building a central short-wave transmitter to complement the one at Fenoarivo, and with which short wave reception in Madagascar could be improved still further."

The Execution of the Project

The director of Radio Netherlands stated that, having recognized the importance of carrying out such a project, the Dutch Government decided to put a sum of 140 million FRG at the disposal of the Malagasy Republic. This decision was relayed to the Malagasy Government in December 1978 by SEM Van Der Willigen, ambassador from the Netherlands to Madagascar, with residence at Dar es Salam.

It has been fitting that Radio Netherlands will take the responsibility for the project. After a thorough and elaborate joint study by technicians from RM and Radio Netherlands, a better location for this station was found. This location is at the site of the central receiver for Radio Netherlands at Sabotsy-Namehana.

Since Radio Netherlands' utilization of this center appreciably declined after the satellite channels via Arivonimamo became operational, this solution could be accomplished under certain conditions.

So today, your excellency, stated Mr Van Wijngaarden, to conclude, letters will be exchanged concerning the transfer of the Sabotsy-Namehana site and buildings from Radio Netherlands to the Malagasy Government, and the execution of the project which will last an estimated several years, may

now begin. "I am happy to be able to participate in the accomplishment of such a project and want to conclude, your excellency, by wishing that the technical cooperation between MR and Radio Netherlands develops still further in the future.

A Cocktail

We note that a few Radio Netherlands technicians also witnessed this codicil signing, which was followed by a cocktail party given by the Foreign Affairs Ministry.

9374

CS0: 5500

NIGER

BRIEFS

SOMGANDE GROUND STATION--Capacity of the "Songande" ground telecommunications station in Ougadougou will be increased to 60 circuits within the next 14 months. [Paris AFRIQUE DEFENSE in French Jul 79 p 13]

CSO: 5500

SOUTH AFRICA

BRIEFS

BOPHUTHATSWANA FM TOWERS--A Germistown engineering firm is presently erecting masts and towers at seven locations throughout Bophuthatswana for the country's proposed new FM radio service, according to a spokesman for the company. The locations are Pilaneberg, Garankuwa, Madibogo, Makadima, Itaoseng, Motswedi and Moreteletse. The spokesman said that because of the country's flat terrain to the south a 150 m high mast was being erected near Madibogo, while the rest of the towers and masts would be not less than 70 m high. The company had been awarded a R459 000 contract for their erection.--Sapa. [Text] [Johannesburg THE CITIZEN in English 7 Jul 79 p 7]

CSO: 5500

WEST'S APPROACH TO MEDIA ROLE, INFORMATION COOPERATION HIT

Moscow IZVESTIYA in Russian 12 Jun 79 Morning Edition p 5 LD

[Article by A. Nabatchikov under rubric "Against Misinformation and Slander": "The Falsifiers' Intrigues"]

[Text] Now that the so-called "information explosion" is taking place in the world particular importance attaches to the nature and content of information and the purpose it serves.

The Soviet Union and other socialist countries have long been using the mass information media to further the cause of peace, detente, mutual understanding, good neighborliness and national independence. More and more states are taking the same course.

Important milestones on the path of implementing this desire were the 20th session of the UNESCO general conference and its declaration on the basic principles relating to the mass information media's contribution to the strengthening of peace and international mutual understanding, to the development of human rights and to the struggle against racism, apartheid and war-mongering. This document was prepared on the basis of a proposal submitted for UNESCO's examination by the Soviet Union in 1972.

Most countries positively assess the declaration and the efforts made within the UNESCO framework to improve the international exchange of information. However, in the course of the discussions and conferences on matters relating to exchange of information imperialist circles' attempts to frustrate and pervert these efforts are becoming increasingly obvious.

At the same UNESCO session in Paris the NATO countries did their best to obstruct the preparation of the draft declaration, tried to get it excluded from the agenda and then insisted on a radical revision of its content and even its title.

After the adoption of the declaration bourgeois propaganda showered it with filth - slander and abuse. The New York TIMES, for example, tried to interpret the declaration as something approaching "an insult to the very idea of human intercourse" (?). Other Western publications launched massed attacks on the declaration.

Some Western press organs took up arms against UNESCO. The British weekly, the SUNDAY TIMES, bluntly stated that "UNESCO is jeopardizing the freedom of the press" and the initiatives of the socialist and developing countries which find a vigorous response in

it "infringe the freedom to disseminate information and civil rights" and allegedly serve as an..."obstacle" on the path to improving the peoples' material well-being.

What is this "freedom of the press" that Western propaganda is so jealous to preserve? It is, as the SUNDAY TIMES freely admitted, "freedom of the press as it is understood in the West." In other words, freedom to subordinate the mass information media to the interests of the monopolies and secret services, freedom to slander the Soviet Union and the other socialist countries.

On the pretext of protecting the freedom of the press the West is sabotaging the decisions adopted by UNESCO, and the ballyhoo over freedom of the press conceals the imperialist circles' desire to retain and strengthen their control of information disseminated in the developing countries. About two-thirds of the world's population, mainly people living in developing countries, are still prisoners of the West's information monopolies. And the major Western agencies' information to these countries is blatantly tendentious, divorced from reality and objectivity and steeped in anticommunism and glorification of the bourgeois way of life.

The infiltration of newspapers, radio and television in the developing countries by the CIA and other U.S. special services is widely known. According to U.S. Congress figures, 30 percent of the CIA's activity takes place in the sphere of mass information.

It is perfectly clear that the West's resistance to changes in the sphere of the dissemination and distribution of information in the modern world and its attempts to continue to have a free hand in pursuing the policy of "information imperialism" and waging "psychological war" against the socialist countries are patently at odds with the basic principles of cooperation in the information section contained in the Final Act of the Helsinki all-European conference.

CSO: 5500

IMPROVING THE TECHNICAL BASE OF RADIO AND TELEVISION BROADCASTING

Moscow VESTNIK SVYAZI in Russian No 5, May 78 pp 15-16

[Article by A. Pustovoytovskiy, chief engineer of the Republic Center of Radio and Television Broadcasting and Radio Communications [RURT] of the Belorussian SSR Ministry of Communications]

[Text] The further development of radio and TV broadcasting, the expansion of the zones of high quality reception of TV and radio programs, the increase in the quality of program transmission and in the operating efficiency of technical facilities are basic problems that are being solved by radio specialists of the republic in the 10th Five-Year Plan period.

Along with building new radio and broadcasting television (TV) stations and radio stations designed for operating in regions not in normal reception zones, the collectives of radio enterprises of the RURT of the BSSR Ministry of Communications are improving existing equipment and its servicing. Radio and auxiliary equipment are being constantly modernized and the organization of management and operation are being constantly improved. All this is directed toward solving the main problem -- raising the quality and efficiency of their operation.

To provide people of the republic with TV and ultra-shortwave (UKV) with frequency modulation (ChM) broadcasting, a branched network of broadcasting stations was developed. It consists of Radio-TV stations (RTPS) that use masts 350 m and up to 200 m high, and high power radio-transmitting TV and radio broadcasting stations. Low power retransmitters with type RTsTA-70 and TRSA apparatus are also available.

With such a TV network, 96% of the people of the republic can receive one program; 76% -- two and 20% -- three TV programs. At present the radio audience in Belorussia receives three programs of Central Radio Broadcasting and two republic programs. The citizens of Minsk and adjacent regions receive, in addition, a fourth union program and a stereophonic program.

The possibility of receiving so many programs was achieved by using, for the first time in our country, the combined networks of TV, UKV ChM and

medium-wave (SV) stations of a synchronous broadcasting network. This combination makes it possible to expand the synchronous network of radio broadcasting stations with considerably less capital investment. Actually, in this case, it is possible to utilize existing masts or towers for suspending SV antennas, the technical buildings, channels etc. It is also possible to save labor.

All the advantages of a combined network are being used to create in the BSSR a complicated three-frequency synchronous network of radio broadcasting which now provides a second republic program to the people. In developing this system, staff workers of the RURT and the NIIR [Scientific Research Radio Institute] manufactured and investigated several types of antennas of which structurally, the "tilted beam" antenna was found to be the most convenient and fairly efficient.

The working array of the antenna is made of three parallel conductors 6 to 8 mm in diameter 1.5 to 2 m apart. The working length of the antenna is selected so that the input resistance is in the order of 150 ohms and is equal to the wave impedance of a standard feeder, while the reactance was of an inductive nature compensated by a set of six type K-15-U-2 capacitors. This allows the installation of the feeder lines compact matching devices on the terminal supports, and avoids the use of antenna pavilions under the antennas, saving the money to construct them.

Inasmuch as a "double tilted beam" antenna consisting of two tilted beams is used as the radiating antenna, an antenna pavilion is built close to the equipment building which matches the transmitter with the inputs of two feeders and for providing a standby antenna-feeder system. In it there is a cabinet of a typical antenna pavilion SV transmitter. Its elements are used to match the wave impedance (250 ohms) of the transmitter feeder to the total impedance of the two antenna feeders (75 ohms) or (if one of the halves of the antenna system fails) to the input impedance of the feeder remaining in operation (150 ohms).

At present, on the basis of such a technical solution, 10 radio broadcasting stations of a synchronous network now operate in the RTPS in the combined version. New stations will be put in operation in the very near future.

Some difficulties were encountered in the course of creating the combined synchronous network. When low power (7 to 5 kw and less) transmitters are installed at the radio-TV stations (which was not specified by plans for these RTPS), it is very important that the transmitters be very compact, light, highly reliable, inexpensive, yet provide the necessary quality indicators in radio broadcasting. However, acquiring SRV-7 transmitters which meet these requirements was found to be very complicated. To provide the highest efficiency of operation of the combined stations, the RURT specialists decided to change over the shortwave transmitter manufactured by industry to the medium wavelength range. At the same time, its quality indicators were improved considerably and its power in the carrier mode was

increased to 5 kw. This made it possible to create inexpensive, efficient transmitters for combined stations.

Designed with an automatic anode modulation circuit, such a transmitter has considerably better indicators. It has almost half as many oscillating tubes, capacitor filters and other elements that are more apt to fail frequently. This produces high reliability, small size and weight and is inexpensive to manufacture and operate. Its power indicators are also high. The electrical and acoustic indicators of the transmitter meet GOST requirements. This is achieved by using optimal circuits for the final and prefinal amplifiers, high feedback in accordance with the envelope of the modulator and two last stages of the transmitter.

Besides creating combined networks, we are introducing automatic control and monitoring systems, raising the reliability of operation of the radio equipment and centralizing the control of multiprogram radio and TV broadcasting stations. Thus, to reduce the number of attendants at transmitting radio centers, increasing the quality of service and improving the organization of control and monitoring the management of radio broadcast installations was centralized.

For this purpose, central apparatus administration of the radiocenter TsAUR were created in which a central control board (TsFU), monitoring-measuring apparatus for radio broadcasting and communications, apparatus for operational measurements and spacing the frequencies of the transmitters, and boxes for lead-ins of working and standby cables are installed. To reduce the intensity level of the high frequency field created by the radio transmitters, the TsAUR have efficient electrostatic and electromagnetic shielding.

In radio centers where it is not possible to create a TsAUR, central control boards and apparatus for monitoring and measuring frequencies and quality indicators of the radio broadcasting and communications channel are installed in the equipment room of the transmitting installations.

In centralizing the control of radio and auxiliary equipment, laborious work was done to raise the reliability of radio transmitters and other apparatus and to manufacture and introduce central control boards. However, all costs repay themselves in the course of operation of the centralized installation.

Jointly with the NIIR of the USSR Ministry of Communications, a central equipment room was developed for the control and monitoring of the multiprogram RTPS. It contains modern equipment for TV and radio broadcasts. The RTPS for which the apparatus room was created provides for transmitting three color TV programs for which three TV stations were installed (in the future it is planned to install another station for transmitting a fourth program). Moreover, the RTPS broadcasts five radio programs, including one stereophonic program repeated by two two-program UKV stations and an SV station of the synchronous broadcasting network.

A number of devices is installed in a special central apparatus room for controlling and monitoring the indicators of this equipment. From the central control board (TsPU) of the apparatus room it is possible to switch each TV or radio broadcasting station in and out, to switch to standby equipment and to monitor constantly the signal levels, percentage of modulation and deviations of the stations. The TsPU works jointly with the monitoring-measuring apparatus which provides fully for measuring quality indicators and issuing TV test signals. The set includes TMA-63, MZ-5 and SK-3-42 bays; color band and G6-8 oscillators; apparatus for introducing test lines, and meters for measuring the parameters of TV transmitters (IPTP). Moreover, the apparatus room has a system for depicting data (SOI) when the TV and radio broadcasting stations are operating. The data is provided by the apparatus of the tolerance automatic control of the TV stations (AKTVRS), the unit for automatic monitoring and control of transmitter switching (BAKUK) and the KDU-6 apparatus.

The introduction of the central apparatus room of a multiprogram RTPS makes it possible to automate monitoring, concentrate monitoring and control of TV and radio broadcasting stations in one apparatus room and to utilize devices for various monitoring purposes repeatedly. This leads to the possibility of a partial reduction in the number of attendants and the volume of monitoring-measuring apparatus with considerable improvement in the quality of monitoring.

This raises the standard of operation, and the technical esthetics of production. The work efficiency will continue to increase with the installation of unattended automated TV and radio broadcasting stations when they are in operation.

Along with these large jobs of combining and centralizing, we are working on raising the quality and reliability of the radio apparatus. Devices for preliminary correction (nonlinear and phase) of the TV channel signals and automatic changeover to standby channels for program transmission were made in the zonal laboratories for all TV stations of the republic. The TV-5/1, 5-I-II station terminal units and TV-50/15-I-II station preterminal units were modernized. Terminal amplifiers with GU-36 B-I tubes on TV-50/15-III are also being changed over to a common grid circuit.

Antenna installations of TV and radio broadcasting stations are being improved, standby feeders are being installed and the efficient utilization of the radiated power is being increased. Work is being done on obtaining bi-harmonic modes for raising the industrial efficiency of stations. At the same time, existing equipment is being renovated. Thus, a new automated station type ATRS-5/1 and a TV-20/5-IV-V decimeter range radio-TV station are being introduced.

In the current five-year plan period, it is planned to develop and improve radio and TV broadcasting transmitting networks further by using new equipment that provides higher quality broadcasting and wide introduction of color TV.

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GOSTELERADIO OFFICIAL COMMENTS ON BROADCASTING SYSTEM

Moscow GOVORIT I POKAZYVAYET MOSKVA in Russian No 19, 7-13 May 79 p 18

[Interview with the deputy chairman of Gosteleradio, Genrikh Zigmundovich Yushkyavichyus]

[Text] The editorial board of our weekly has asked the deputy chairman of Gosteleradio [State Committee for Television and Radio] Genrikh Zigmundovich Yushkyavichyus to answer some questions which are of interest to our readers. Today we are publishing his discussion with our correspondent.

[Question] On the eve of Radio Day the editorial board of our weekly newspaper is receiving many letters in which television viewers and radio listeners ask about the achievements and paths of development in television and radio broadcasting equipment. Can you answer this question from the viewpoint of the work results of the past year?

[Answer] In 1978 all of the central television studios were re-equipped for color broadcasting.

Some 90 percent of central television programs are now shown in color and only earlier-recorded programs are being televised in black and white.

The quality of color television is gradually improving. Even the greatest skeptics are now buying color television sets today. New color television set models have greater reliability and have been spared from the many "childhood diseases" of the models of previous years.

The existing disproportion between the large volume of color transmissions and the number of color television sets is getting smaller. It is true that it is not happening as quickly as we would like.

The number of color television sets, owned by viewers, is approaching four million, but the demand for them among the population is at present greater than their production.

In 1979 industry plans to produce more than 7 million television sets, almost 2 million of which are color sets.

[Question] A year ago in your article "Television and Radio Technology in the 10th Five-Year Plan," published in number 19 of our weekly, you paid a lot of attention to the development of color television, its geographic expansion, and the increase in quality. What has been done in the time since then?

[Answer] Color television requires not only new studio equipment but also more modern transmitters and video transmission channels. The USSR Ministry of Communications is doing much work on re-equipping the radio relay and cable trunkline television network and improving the satellite communications channels for transmitting color television programs.

At the same time USSR Gosteleradio is strengthening the material and technical facilities of many television studios used for the production of color television programs.

Now 43 television program centers are carrying color programs. On the whole, more than 70 mobile color television stations, 15 mobile television stations with built-in video tape recorders, and 54 mobile video-recording stations are in operation throughout the country. Color television set owners could know with certainty that during the election campaign for the USSR Supreme Soviet central television broadcast its reports in color from practically all regions of the country.

Earlier, during the recording of such broadcasts as "From the Bottom of the Heart" or "With a Song for Life," all of the color television equipment had to be supplied from Moscow to the places where the shooting was done. Now these broadcasts are made at the technical facility of the local television studios.

In 1978 the radio and television centers at Kiev, Riga, Tallin, Voronezh, Ul'yanovsk, Kazan', Perm', and Rostov-na-Donu have received the new "Magnoliya" mobile color television stations, new studio equipment was provided for the larger studios established in Moscow, Kiev, Tashkent, Tbilisi, Kuybyshev, Saratov, Sverdlovsk, and color television equipment for announcer studios were received by 18 radio and television centers.

Television film production has been widely developed. All of this permits the geographic broadening of color television transmissions.

The main difficulties in solving the problem of further increasing the quality of color television transmissions are the following: television broadcasting is still done with low-power retransmitters unsuitable for color transmissions, and there is a lack of high-quality, sensitive 16-mm color motion picture film and high-quality magnetic tape for video recording.

[Question] Television viewers living in remote regions of the country are greatly interested in what effect the Raduga satellites have had on television broadcasting. Can you dwell in some detail on this?

[Answer] The Raduga satellites have been launched into a stationary orbit, i.e., they are immobile relative to the earth's surface. This makes the reception of signals from these satellites easier because it is not necessary for a receiving station to have rather complex systems tracking the satellite's movement.

The signal from the Raduga satellite is used by the very same Orbita stations that work with the Molniya satellites. However, because of the immobility of the Raduga satellite relative to the ground, one such satellite is sufficient to transmit an entire program without technological breaks which are unavoidable when transmitting from the Molniya satellites where it is necessary to switch the receiving station from one satellite to another.

The Raduga satellite is used to transmit one of the versions of central television's first program to areas in the fifth, sixth, and seventh time zones (the Orbita-2 program). After 1800 hours Moscow time it is used to transmit program II of central television (program IV in Moscow) to 21 Orbita ground stations into regions where it is impossible to transmit even one central television program by radio relay or cable lines.

The Ekran satellite is more powerful. Its signal can be received by comparatively simple and significantly less expensive receivers than those at the Orbita stations.

The Ekran satellite is a qualitative advancement in domestic satellite television. It is enough to say that they install as many receivers for the reception from the Ekran satellite in two weeks as there were Orbita stations built during 10 years.

The number of Ekran-type receivers installed, as a rule, in small populated points where there was no television is now approaching 300.

The Ekran satellite is going through experimental testing and USSR Gostele-radio has not yet received it for normal operations. However, it is already clear today that the use of Ekran-type satellites is the most economically profitable and fastest way of bringing television to large areas of our country.

For the most optimum utilization of such satellites a larger number of channels is required so that one can transmit central television programs, without either shortening or changing them, in a time convenient for the various time zones.

[Question] The games of the USSR people will soon begin in Moscow. Will the Olympic television and radio complex now under construction be used during these games?

[Answer] Yes, a part of the television and radio studios of the new Olympic wing of the Ostankino television center will be used during the 7th Games of the USSR. In connection with this, more than 2,000 foreign athletes will

participate in the 1979 Games and many foreign television and radio companies intend to broadcast this great sports occasion. Intertelevisión, the Japanese television company Asakhi, and several West European television organizations intend to widely televise the 7th Games of the people of the USSR in their companies. American television is also showing interest in the Games. The new television and radio broadcasting equipment is now being tuned in the new building.

Incidentally, the new television and radio commentator booths which will be used during the Games and the Olympics were tested for the first time during the world and European hockey championships. The commentator booths were created through the combined efforts of Soviet and Hungarian specialists. Their sound equipment was manufactured at the Hungarian BEAC plants, and the color monitors at the Kaunas plant.

Although the commentator equipment has received a high rating both from the foreign radio and television journalists and from our most experienced hockey commentator Nikolay Ozerov, our and the Hungarian specialists still must do much final adjusting of it.

[Question] How are technical radio broadcasting facilities, both central and local, being renovated? Many of our readers are particularly interested in the question of developing stereo radio broadcasting on ultra-short waves.

[Answer] In this five-year plan much work has been conducted on strengthening radio material and technical facilities. New, contemporary transistorized equipment has been installed in 25 radio broadcast buildings of the country. In the cities of Tallin and Leningrad they have put into operation semiautomatic central control rooms. Work is being carried out on automating the control rooms at the State House of Radio Broadcasting and Sound Recording in Moscow.

A large amount of different equipment has been installed in radio buildings during the 3 years of the five-year plan. Some 81 new portable automatic sound devices have been received and are in operation. Radio correspondents have received more than 1,000 new reporter tape recorders. In the State House of Radio Broadcasting and Sound Recording they have installed multichannel tape recorders for complex musical recordings. As a rule, all new musical programs are recorded in stereo.

The main obstacle to the rapid development of stereo broadcasting in the country is the shortage of stereo equipment for ultrashort wave FM transmitters, and intercity channels for transmitting stereo programs. They are still producing an inadequate number of stereo radio sets. It is true that it is necessary to take into consideration that because of the great distances the creation of intercity stereo channels for our country is not easy as either a technical or an economic task.

Radio listeners highly value high-quality sound, but inexpensive transistorized receivers which would contain, for example, the ultrashort and middle

wave bands or the ultrashort and long wave bands, are difficult to acquire. There would also surely be a great demand for motor vehicle radios with ultrashort wave stereo.

[Question] Letters come into our publication requesting that we discuss television broadcasting in the microwave range.

[Answer] Television broadcasting in the microwave range is now being conducted in more than 30 cities of the country. It is already difficult to list them, especially since the number of stations in the microwave range is growing uninterruptedly.

Putting into operation a microwave transmitter where up till now only a metric wave range transmitter operated makes it not only possible to receive yet one more television program or, in some cases, a signal of better quality for an already available program, but it also causes additional troubles for Minsbyt [Ministry of Domestic Services for the Public] and the Ministry of Trade and, of course, for television viewers.

The overwhelming majority of television sets do not have a microwave band and the wisest course for large buildings with collective antennas is to equip them with a converter with which they can receive a program in the microwave range over one of the free channels of the available television set. Of course, a greater number of attachments and television sets themselves with a microwave band are required.

However, the word from the population in various areas is that the work necessary to provide the reception of programs in the microwave band is not always being carried out.

The planning and trading organizations and the industrial ministries must prevent the danger of the transmitting network in the microwave range being developed by itself and the receiving network also being developed by itself.

[Question] What crews of television centers and radio broadcast houses of the country are the best, providing the highest technical quality of television and radio transmissions?

[Answer] All-union socialist competition is being conducted among the Gostele-radio enterprises. At the enterprises and in the state committee organizations, 22,000 workers have been awarded the title of "Shockworker of Communist Labor" and three enterprises--the State House of Radio Broadcasting and Sound Recording, the Ukrainian SSR Republic Television Center, and the Gomel' Radio and Television Center--carry the honorary title of "Collective of Communist Labor."

The enterprises are paying great attention to spreading the advanced industrial know-how to fulfill the plans for the socialist development of the collectives. For achieving the highest indicators in raising production efficiency and work quality in fulfilling the 1978 national economic plan and the socialist obligations undertaken, the collective of the State Radio Broadcasting and Sound

Recording House was awarded the challenge red banner of the CC CPSU, the USSR Council of Ministers, AUCCTU, and the Komsomol CC and was entered into the all-union honor roll at the USSR VDNKh.

The collective of the television technical center imeni 50-letiyе Oktyabryа was presented the challenge red banner of the CC CPSU, the USSR Council of Ministers, AUCCTU, and the Komsomol CC.

Challenge red banners of the USSR State Committee for Television and Radio Broadcasting and of the CC of the trade union of cultural workers with diplomas and first prize money awards for 4th quarter 1978 results were conferred upon the Lithuanian, Estonian, Dagestan, Checheno-Ingushskiy, and Karaganda radio and television centers, and for 1st quarter 1979 results--to the television technical center imeni 50-letiyе Oktyabryа, the State Radio Broadcasting and Sound Recording House, the republic radio and television center of the Estonian SSR, the Odessa Radio and Television Center, and the Tselinograd Radio and Television Center.

8524

CSO: 5500

RADIO DAY: TELEVISION, RADIO FACILITIES AND OLYMPIC CONSTRUCTION

Moscow IZVESTIYA in Russian 6 May 79 p 3

[Article by V. Belikov: "An Auditorium of Billions of People"]

[Text] The scope of Soviet television and radio is indeed enormous. In our country today there are around 70 million television sets, 70 million radios, and more than 74 million rebroadcasting points. More than 83 percent of the population of the Soviet Union gathers on any given day by their black-and-white and color television sets.

This year we are planning to put into operation still another one--a second all-union central television schedule and then to organize also a third all-union schedule--an educational one.

A significant increase in broadcasting volume is being accompanied by a broadening and strengthening of Soviet television technical facilities which must, in the near future, bring the Moscow Olympic Games to billions of people throughout the entire world.

In the last months a great deal of construction work has been going on day and night at the foot of the Ostankino tower. The walls of the two multi-story building wings have been growing upward--the OTRK [Olympic television and radio complex] and the USSR Ministry of Communications switching center. Now among the uniforms of the builders you all the more often see the white overalls of the installers and tuners of the most complex electronic equipment and equipment for the high-speed processing of movie film.

The color television picture with the natural noises and sounds of the sports battles, along with the commentary of reviewers and journalists, will come into the OTRK building from the stadiums and grounds, fields and rings, basins and tracks. About 40 mobile television stations will become the indispensable eye-witnesses of the competitions in Moscow and Tallin, and also the soccer matches in Leningrad, Kiev, and Minsk.

An arsenal of mobile television technical facilities are supplemented by special motor vehicles equipped with video tape recorders which will record the

picture and sound on film from areas where we do not intend to have live broadcasts. Light hand cameras with portable video tape recorders will be available to the television reporters—they will allow you to see the happy face of the winner of a sports contest and hear his first words of joy uttered when a record has just been born.

"The system collecting electronic video and audio from every quarter into the OTRK is not the only one of those created for highlighting the 1980 Olympics," says the deputy chief designer V. Krylkov. In the opposite direction—from Ostankino out to the places of the television broadcasts and video recordings--go so-called synchronization signals. They provide an absolutely accurate consistency to all pictures, they prevent the appearance of breaks, the objectionable break-up of frames when changing topics, and coarse general layouts. In other words, all of the complex electronic equipment will operate in subordination to the single pulse of a total binary bond system.



"A third communications system--a servicing and informational one--is also being created," V. Krylkov continued. "It forms a complete-circuit television network. With its help, a producer or commentator working on any transmission, at any time, can find out what is happening at different Olympic events. They can use the very latest material in the program being prepared here for showing. The total number of television programs which will be transmitted from the OTRK to the various regions of the world, will reach 20."

There is no denying that the communications network set up to serve the 1980 Olympics is unprecedented in its complexity and ramifications. Coupled with the receiving-transmitting equipment on microcircuits, it gives the creative workers and technical personnel of television of many countries of the world the maximum potential for the clear, dynamic narration of the Moscow games by utilizing the entire richness of the means and methods of description.

One of the leaders of the work on creating the new generation of domestic television equipment, M. Grudzinskiy, acquainted us with the already-prepared OTRK premises. On some of the heavy soundproof doors, covered with a grey plastic, they have already fastened plates with the names of foreign television companies and organizations who have reserved studios and equipment for themselves.

"In all, 300 eyes--of the latest in television cameras--will observe everything that will happen at the Olympics," says M. Grudzinskiy. "It is not possible, of course, to transmit the enormous flow of video sound information all at once. Something like a centralized topic storehouse is being organized at the OTRK."

Various means for conserving the picture and sound--magnetic tape and movie film, color slides and photographs, sketches and textual material--all of this will be near at hand to the creators of the daily Olympic programs. On interrogation from the producer's console in any of the equipment-studio units, everything that is necessary for forming the next transmission will be given along the internal communications channels and shown on the control screens. The producer can give the command--and the remote control will repeat the required episode, reproduce it in slow motion or stop it for several moments (stop-frame).

A network diagram depicting the final stages of construction stretched along the entire length of the wall in the official office of the manager of the OTRK, A. Mel'berg.

"For the entire collective of our key Komsomol construction project," A. Mel'berg says, "and also for the many scientific and production organizations, participating in the manufacture and installation of the equipment, the birthday of the television and radio complex will be the date of the opening of the final competitions of the 7th summer games of the peoples of our country. It will be precisely then, in July of this year, that the transmissions from the new control rooms and studios will begin."

This will not be a preliminary testing but a real operation comparable in its scale and intensity with the 1980 Olympics. Viewers could already have partially familiarized themselves during recent transmissions from the Sports Palace in Luzhniki of the world hockey championships with the capabilities of the arsenal of new technical television means--these transmissions have already been carried over the Olympic television broadcasting circuit.

8524

CSO: 5500

USSR

BRIEFS

KHABAROVSKIY KRAY RADIO, TV--Khabarovskiy Kray currently has a television and radio station and 35 relay stations in operation. Television viewing is now available to nearly 85 percent of the people in the kray. [Vladivostok Maritime Service in Russian to the Pacific Far East 0710 GMT 2 Jun 79 OW]

NEW AUTOMATION SYSTEM--The new Agroinform international automated system will make it possible to cope better with the stream of information. The project was drafted by scientists of the CEMA countries. The task of Agroinform is to eliminate duplication in the selection, treatment and dissemination of information, in conditions of an international division of labor and cooperation. The new system is expected to be completed next year. Czechoslovakia is the coordinating country for the work. [Text] [Moscow Domestic Service in Russian 1000 GMT 24 Jun 79 LD]

NEW TV TOWER -- Tashkent -- A 350-meter TV tower will soon rise in Pobeda Park in the Uzbekistan capital. Its foundation is being laid by builders of the SU-69 Trust of the Vysotstroy Glavtashkentstroy. The hardware for the three supports is being assembled by experienced installers from the Novosibirsk Sibetal'konstruksiya. A. Davydenko, section foreman, promises to erect the central shaft of the tower to the 100-meter mark and thereby overfulfill the task considerably. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 17 Jun 79 p 4] 2291

CSO 15500

NORDIC COUNTRIES TO SET UP JOINT DATA NET

Oslo TELEXTRONIKK in Norwegian No 4, 1978 pp 424-429

[Article by Engineer S. Stokke: "A Nordic Data Net-System AXB 301"]

[Text] 1. Introduction

The data net is planned to be built in stages taking into account the need for service. The first equipment with limited operational facilities will go to Denmark, while corresponding equipment for Norway will become operational in 1979.

The industrialization of the net is therefore in its final phase, and this article is intended to review briefly the actual equipment and the functional structure in use.

2. System AXB 301

AXB 30 is the designation for LME's new data network systems; more specifically, AXB 301 is the designation for the system which now brings the Nordic data net into being.

AXB 30 has much in common with two other systems, the telephone station system AXE 10 and the telex system AXD 20. These three AX-systems have a number of common characteristics: The same type of control systems, the same mechanical construction systems, algorithmic language, documentation structure, and so on. As shown by the illustration in Fig. 1 these systems are all designated as the "AX-family".

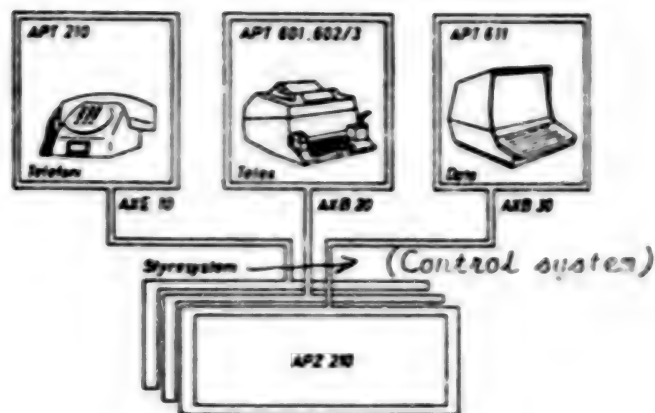


Fig. 1 AX-familien
(The AX-family)

3. System Structure

Like a telephone - and telex net, a data net consists of a large, complex amount of equipment. It is necessary, therefore, to provide appropriate schematic reconstruction for those who will be handling this equipment later on when it is operational, and for maintenance. If the equipment only consists of machine parts, a structural design schematic hardly presents any problem. In SPC-systems there are the additional problems of making the software easily accessible and easy to handle. This is maybe where earlier SPC-generations have been disappointing. It has frequently been observed that functional changes which affect a part of the program have become complicated because one small [in italics] change has occasioned a large [in italics] adjustment. This of course also often results in malfunctions that spread throughout the system.

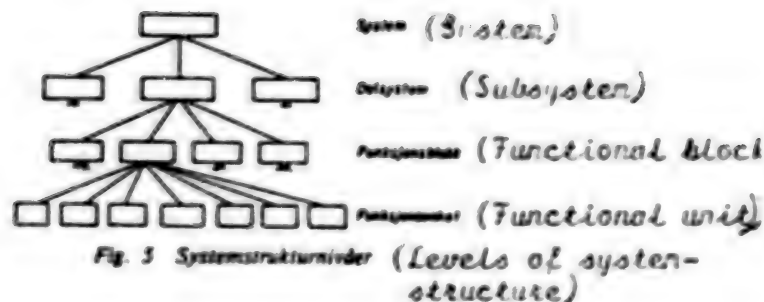
In AXB 30 the software is divided into a number of totally independent blocks. A block can be removed, added or altered without the others being affected because the blocks communicate with each other by standardized "separators" or by program signals. This makes it easier to check out what is happening. The different blocks can, for example, only reach their own data, as data belonging to other blocks have to be retrieved via that block according to the standard procedure.

This means that both the hardware and software can be part of the same structure. Thereby a functional and uniform assembly of both equipment and information is achieved, regardless as to whether the functions are carried out by hardware or software components, or a mix of both.

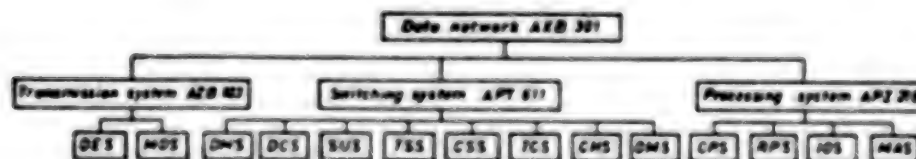
The AXB 301 system is therefore assembled in functional modules both as to the equipment and the attached documentation.

The structure is broken down into four different levels (see Fig. 5):

- System
- Subsystem
- Functional blocks
- Functional units



The functional blocks within the same functional area are assembled in subsystems, for example, the central processor CPS is a subsystem to the control system APZ 210 (see Fig. 6). The functional blocks can also be divided into smaller, functional units. A functional unit may, for example, be a printed card or a group of a few printed circuit cards or a program.



Subsystem: (Subsystem):

AZB 103	DES	Data circuit terminating equipment subsystem
	ADS	Modem subsystem
APT 811	DMS	Data multiplexer subsystem
	DCS	Data concentrator subsystem
	SUS	Subscriber subsystem
	FSS	Trunk signalling subsystem
	CSS	Central switching subsystem
	TCS	Traffic control subsystem
	CMS	Charging subsystem
APZ 210	DMS	Operation and maintenance subsystem
	CPS	Control processor subsystem
	RPS	Regional processor subsystem
	IOS	Input/output subsystem
	MAS	Maintenance subsystem

Fig. 6 AXB 301: Systemstruktur-systemer og delsystemer (System-structure systems and subsystems)

APZ 611 includes both hardware (multiplexer, concentrator, the connection part in the central and the necessary software placed and managed by the control system APZ 210.

4. A Few Words on Technology

The equipment technology can be said to be very modern, at least when one speaks of telecommunications.

Telecommunications equipment has traditionally been built with the emphasis on reliability and a long lifetime. Uptill now we have been delivering replacement equipment to the AGF-centrals introduced in the early 20's. We will not explore whether this lifespan is due to the quality of the equipment or to other circumstances. But it is clear that the special emphasis on a long life which applies to telecommunication equipment makes the use of modern technology problematic. In order to evaluate the reliability of different technologies, and individual circuitry in them, statistical data are needed. Data on a statistically satisfactory scale can only be obtained from operational equipment which meets comparable operational and environmental conditions for what one plans to construct. And that, again, easily becomes a vicious circle.

The use of modern technology and telecommunication equipment is therefore a considerable problem area for industry, where important work segments can be characterized by key words such as selection criteria, testing, classification and quality control. The latter exemplified on EB by the systems MAKON (input control) and TILDA (error registration). In order to avoid the problem situation where "you can't take a bath until you know how to swim," new technology is introduced by type testing. In type-testing of component families, a representative selection of types in that family are chosen from different suppliers. These tests then form the basis for judging the quality of the rest of the components and the ability of the suppliers to master the technology they use in the production process. When permission is granted from the standardization authorities, other circuits desired within the same family are tested routinely according to functional needs in regard to secondary effects and possible critical parameters in the considered construction.

Simply stated, it can be said that when two input devices have been type-tested and accepted, the likelihood of good quality from a third input device from the same family and suppliers is also good.

Thus when the claim is made that modern technology is used in the data net, this is based on the procedures and conditions just described.

What is actually used in the data net? Well, for station equipment essentially the TTL, TTL-LS and MOS (microprocessors and memories), whereas the subscriber uses CMOS.

Maybe these cannot be said to be new gains in research, but they are advanced modern technologies which provide the basis for an entire telecommunications network.

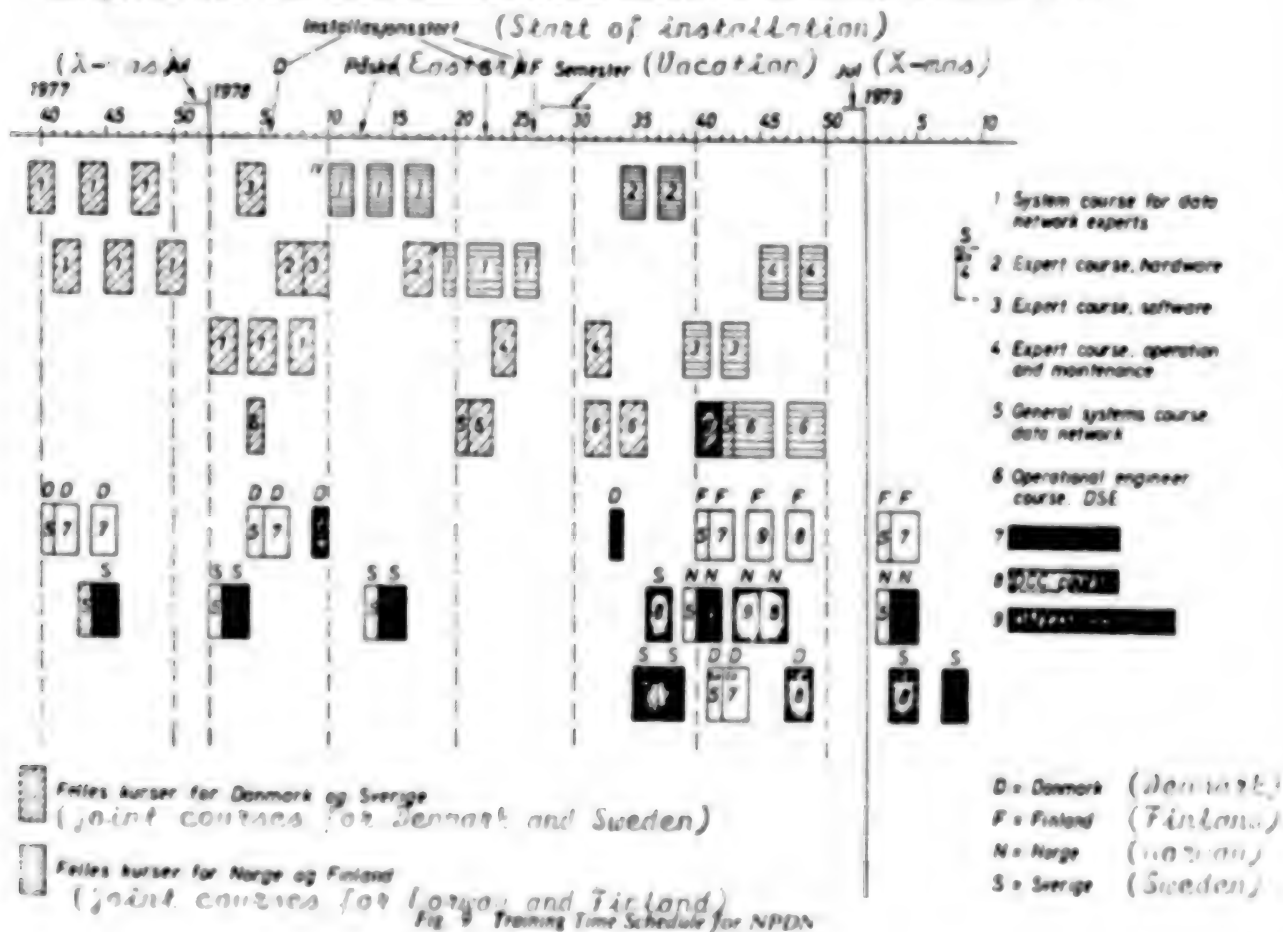
5. EB-Manufactured Equipment for NPDN

The net is constructed by the main components DSE, DCC, CMX/RMX and DCE as well as a number of different modem types.

We participate in this project as an important partner to L.M. Ericsson, and we will deliver the net components DCC and DMX/RMX for all the Nordic countries and DCE for Sweden and Norway.

In addition we assist personnel in Stockholm for program development, and we will carry out the installation and operation of equipment in Norway.

The extensive training plan (see Fig. 9), specified in the contracts, should also be mentioned. Altogether there are nine different types of courses which will be available to all four administrations in a varying number of repetitions. We have the responsibility on our side for the instructional basis for courses, and the courses themselves on DCC, CMX/RMX and DCE with each course running for 14 days. The DCC and DCE courses are already implemented in Denmark and Sweden. A round of all of these three courses will be given for the Telecommunications Board in October/November 1978.



However, LME has the responsibility for the total project, and the entire system has been given a uniform, structural and modular construction with LME's newest documentation standards as the basis, standards which we, by the way, use through our cooperation with LME.

5.1 Subscriber Adaptation Unit DCE

There are five DCE types:

DCE-X: For connecting terminals to CCITT Rec. X 21 interfaces. This is where all signalling will take place between the terminals and the net, so that the only servicing for DCE will be in connection with the test switch.

DCE-V: For connecting to terminals with Rec. X 21 bis-boundary circuits. DCE-V is only used in servicing "direct dialling".

DCE-VP: For the same terminal circuits as DCE-V, but with a keyboard for all types of numerical selection.

DCE-VC: For connecting asynchronous terminals. Only direct dialling as for DCE-V.

DCE-VCP: For the same types of terminals as DCE-VC, but with a keyboard.

5.2 Multiplexer DMX/RMX

The multiplexer consists of two main components. One management module for the subscriber side and one target synchronizer module for the high speed, assembled in one container. The subscriber side can be expanded by inserting printed circuit cards (line cards) for up to 64 subscribers, where each card can connect up to eight subscribers.

In addition, there is transmission equipment (LME), which consists of subscriber modem and high speed modem units.

The equipment is constructed in panels.

5.3 Concentrator DCC

The concentrator consists of five different types of magazines, where the number of line modules for the subscriber side and the target synchronization units for high speed will depend on the size of the addition. Each line module has 50 subscriber inputs which can be added on to up to 15 line modules, i.e. 750 subscribers. The minimum number of target synchronization units is two and the maximum is eight units (magazines).

In addition there is also here the same type of transmission equipment (LME) as for the multiplexer.

The physical size will therefore vary from 2-3 panels up to 12-15 panels for 500 subscribers.

6. Mechanical Construction

The modular functional structure is the system maintained in the mechanical design. In practice this means that the system's functional modules on the hardware side are identical with the physical magazine unit.

The magazine contains printed circuit cards which are connected by cable to the back of the magazine (wirewrapping).

All connections from one magazine to another go by way of standard cables with contacts at each end which are plugged into the fronts of the circuit cards in the magazine. In the frame of the panel are jacks for these cables.

The placement of the magazine thereby becomes very flexible, and the traditional panel is replaced by panel frames and shelf sections where the magazines easily can be placed.

9349

CSO: 5500

INTERNATIONAL AFFAIRS

SATELLITE PROJECT THREATENED BY RISING COSTS

Helsinki Domestic Service in Finnish 1530 GMT 27 Jun 79 LD

[Excerpts] The implementation of the Nordsat, or Nordic satellite project, has begun to appear more uncertain than before since Sweden, in particular, has begun to be horrified at the rising cost of the satellites. The final, partial reports on the satellite are already completed in practice, but a summary of these will not be released to the public until next fall. Juhani Lompola reports from Stockholm:

[Lompola--begin recording] The appearance in the sky of Nordsat, the Nordic satellite to transmit television and radio programs between the Nordic countries, begins to look like an uncertain event, at least if the headline in the authoritative SVENSKA DAGBLADET: "Sweden Says No to the Nordic Satellite" proves to be true. An article in the paper contains an interview with the head of office of the Swedish Social Democratic Party, Leif Andersson, who has continuously taken part in the party's discussions on satellite matters. He was also involved in initiating the first report on a Nordic satellite. Andersson thinks that the paper exaggerates the matter in its headline, but admits that the doubts concerning the future of the Nordic satellite project are very great, considerably greater than only a few years earlier, as he says to Yleisradio [Finnish broadcasting company]. He says in the interview that the Social Democrats have not yet made a decision for or against, but the answer will probably be "no" on the basis that currently exists for making the necessary decisions. Sweden's role in the entire project is of essential importance. It has been calculated that Sweden, as the richest country in the north, would undertake to bear 40 percent of the cost of the satellite system; and if this fails to materialize, it is difficult to see who would undertake to pay Sweden's share.

Andersson says that doubts are caused by new costs, which are estimated to rise much above what was previously calculated. It was first thought that one satellite would be enough, but it is now believed that three satellites are needed, says Andersson, referring to plans for two satellites to serve program transmission and for a third to be in reserve. With the help of these, seven TV programs and eleven radio programs would be transmitted and there would still be room in the channels.

The partial reports on the Nordic satellite, which analyze cultural, judicial, technical and economic problems are completed in practice. The main report, to be drafted on the basis of these partial reports, was due to be completed at the same time, but it has now been postponed until October, although the partial reports are due to be made public at the end of August. There has been talk in Stockholm about conflicts in drafting the main report, but elsewhere it is said that there is no wish to publish the main report with its high cost estimates right in the middle of the Swedish election campaign, which ends with elections in mid-September. Juhani Lompola, Stockholm. [end recording]

INTERNATIONAL AFFAIRS

TELECOMMUNICATIONS STATION TO BE BUILT IN GIBRALTAR

Madrid ABC in Spanish 7 Jun 79 p 17

[Text] The Spanish and British telecommunications agencies have agreed to install on the Rock of Gibraltar a satellite communications ground station.

The negotiations took place through meetings between both technical agencies in conformity with the application of the international radio-telecommunications regulation--an annex to the agreement on international telecommunications now in effect and signed by both countries. The international agreement demands pre-agreement by the affected countries so as to avoid transmission interference.

The above mentioned installation is to be built by the British Cable and Wireless Company and it will come into operation (during a trial period) with the British understanding that no type of interference occurs in southern Spain. In the event this takes place, transmissions will cease until said interference is remedied.

CSO: 5500

COMMUNIST VIEW OF MASS MEDIA, TELECOMMUNICATIONS

Paris FRANCE NOUVELLE in French 19 May 79 pp 24-26

[Article by Jean-Claude Quiniou: "Telematics and Social Communication"]

[Text] The Franco-German direct television satellite was to have been placed in orbit at the beginning of the year. Each side had its minister, its conference, its bit of the civil service, each its role in the strategy of the multinationals, each its glib flimflam talk. The fuse was wet: Germany preferred first to let Messerschmidt do its business of eight satellites with China before returning to negotiate with France from a position of strength. It is only a delay; exhibitions and speeches wouldn't have been useless. One can see it more clearly today....

R. Pontillon, a leader of the Socialist Party and president of the Socialist International, has since 1971 been directing the AVEC Exhibition (Audiovisual and Communication). The year 1979 was exceptional: "The exhibition, it is true, constitutes a partial and yet concrete illustration of the concept of telematics defined in the recent Nora-Minc report." Furthermore it was Mr Pomonti, also of the Socialist Party, who signed the first annex of this report ordered by Giscard d'Estaing. The competent minister was Alice Saunier-Seïte. J. P. Lecat, who was a member of the panel, was not thrown off course by the press conference held on 9 January by the president of the exhibition: "French industry is bound to the date of launching of a French satellite scheduled to broadcast programs which are attractive and different from those broadcast at the present time by the French television...." It was in fact bound by the good graces of Germany, but it is true that by licensing to the SFP [expansion unknown] and by seeking an agreement on the fourth channel with RTL [expansion unknown] the government fulfilled the desires of R. Pontillon. The Thompson company could appoint him president of a new branch...In a last appeal, R. Pontillon exhorted his colleagues to "rethink their marketing."

At Nice, at the FIREP (International Festival of Production Firms) on 6 April, they were expecting J. P. Lecat, who was the godfather of this show, presided over by J. Medecin. It was the minister of handicrafts who came, flanked by General Mitterand (director of the SNIAS) and of the

Vivien RPRC [expansion unknown], the bully of the right to strike in television, with the support of a majority of the deputies.

As the subject of the conference was "the radio and television monopoly confronts the satellites," R. Vivien was brutally frank: "The television civil service must view itself as that of health: with the existence of rich and dynamic private clinics."

This new concept of the civil service is not very far from that concept defended by the "leftists" of the Free Lyon Radio (Radio Joufflue): "This is what only a civil service radio can offer: the spoken library designed for non-viewers.... The U.S. model assigns to the civil service the servicing of minorities, considering that the majority is big enough to get along by itself."

The marriage is not far off: the UDF [expansion unknown] was already in the Delmas-Chassaing team of Montpellier (Radio [word illegible] bleu) its extreme rightist army of the "Liberation of the Airwaves." It is filling out its troops for the day when, in the expression of Michel d'Ornano at Frejus, "they won't be sawing off the limb they are sitting on."

Already at Nice, despite the plush atmosphere of the international conferences, the right did not deceive itself as to the target. "Tele-Liberte" which held a press conference on its problems, had to undergo a severe police check, led by a well-known commissioner, of the workers of NICE-MATIN and the Palais Mediterranee. The consensus was broken, and the communication no longer came through.

An RPR Poet On Campaign

On 3 May, under the auspices of the National Audiovisual Institute, Roland Nungesser, RPR mayor of Nogent, presided over a conference himself on the subject of the audiovisual industry of tomorrow. It deserves closer attention: It signifies the entry into the lists of the "young intellectuals" of the RPR for the first exercises of the ideological war: a member of the RPR for 2 years, Pierre Emmanuel, ex-poet of the prince, resigned president of the INA, had to justify his candidacy for the European Parliament on his own ground.

This conference, more political than commercial, more polemical than dithyrambic, was offensive with regard to the politics of decay and from the beginning noted that France could not be one of the rare industrialized countries to dispense with delineating a global policy of communication. On this point Pierre Emmanuel knows well the sensitivity of audio-visual workers through having wiped up several strikes at the INA. He knows the criticism of power, he knows the growing needs of local communications. He had to restore his virginity and by the same stroke, by soothing the liberals, to develop in the RPR that strategy of large scale chiseling which makes the fortune of Giscardism and social-democracy. "The strategy

of the spider," they call it in the INA audiovisual circles. For G. Suffert, who presided over a conference in the Senate in December 1978, the services of Pierre Emmanuel defined as follows the lines of force of this policy:

- respond to the new logistical needs of the multinational companies both in the quality of services and in their pricing;
- reconstitute a devitalized rural network and a disturbed urban network;
- satisfaction of a need for local initiative;
- satisfaction of the needs of minorities.

Georges Suffert, of the POINT absorbed the message. In April 1979 he wrote: "There is nothing dishonorable in the fact that Luxemburg and Monte Carlo are fighting over the third satellite channel. It is one of the aims of TDF to open up the market.... The French State will retain intact the broadcasting monopoly." He means the monopoly of commercialization abroad.

Another Thing

A very active awareness of the danger posed to the workers and to France by this policy of economic, industrial, and cultural abandonment is coming to light at the same time as new factors are appearing, a new necessity to organize against the organized corruption of the civil service, and the liquidation of regional and national identities. The Longwy workers with Radio-Lorraine-Coeur showed that it was possible to restore their own means of audiovisual production and broadcasting.

Already local collectives, trade unions, users' associations, groups of researchers, audiovisual creative workers are comparing experiments and projects. A decisive reply can be given by all those attached to the civil service who no longer accept:

- that local information be gagged and that local collectives have no power to manage their own communication space;
- that one journalist out of seven is unemployed;
- that those discharged from the SFP join the army of unemployed of the audiovisual, performing arts, cultural action and creative sectors;
- that dismissals be announced in the industrial sector of telecommunications when new services and new instruments of communication should generate tens of thousands of new jobs.

When one takes cognizance of various proposals and arrangements of a certain number of organizations concerned for different reasons by this situation, one understands what it means for the French Communist Party "to develop...with all the trade unions, organizations, and associations... conditions fertile for the whole popular movement," and the appeal it issues to struggle for the right to information, one of the main dimensions of all the battles.

Already 10 Years...

It is worth analyzing deeply the complex problems posed by the new technological advances achieved in the sphere of information-communication, whether satellites, videotape recorders for the public at large, networks, and new possibilities of local communication. It would be necessary also to take into account the stakes and ambiguities of a development which is not neutral, still oriented in the direction of the production of the system but also still bearing unusual possibilities for the liberation and unfolding of man. We will come back to these problems, but for the moment it seems useful to write a page of history: that of the past 10 years of information activity under the Giscardian power. We will see that the European pretext has already become a recipe.

On 3 May 1969, exactly, Valéry Giscard d'Estaing, who 1 month later was to be minister of economy and finance, gave a shattering speech in the interregnum before the pupils of the Central School on the subject "information and politics." The end of his intervention was prophetic: "It is obvious that in order to insure a real control of the executive branch, the parliament of the future, which is the near future, must itself possess some kinds of control laboratories; this parliament will have to be provided with a mass communication center." Today parliament is still awaiting the Cannac report. It will not even be consulted on the choice and the opportunity of French or Franco-German telecommunications or direct television satellites.

It hardly has need of a computer to execute the right to strike on the part of the personnel of television.

In the same period, at least, if parliament was no longer consulted, it had at its disposal an abundant literature which would have enabled it to assess the prevailing demagoguery.

Maurice Allegre, delegate-general for information media, bubbled with naivete and frankness in speaking of Europe: "At a time when they are talking about mystifying the information process, I nevertheless believe in the usefulness of certain myths, provided they are positive and active and that departing from them it is possible to advance. The large European computer is actually a myth which must be created in order to give it enough strength for the necessity to create it to prevail."

Giscard had just peddled the Bull company to the Americans and they were launching the CII, charged with completing a new computer and of sidetracking Europe. At the same time they knew, to use the expression of the ineffable Maurice Allegre, that they would have to "palm off the little one."

Beyond the myths and speeches of the Noras of the time, the real stakes in information and telematics (which have existed for 10 years) were announced in the Lhermite report which serves as a basis for the Sixth Plan. "The information media must contain the creation of 1,200,000 jobs in the next few years."

The objective was reached: there are 1,700,000 unemployed and Simon Nora is thanking the information people by announcing to the FNAC last November that "the professions of the information media are called upon to dissolve themselves."

Another objective was gained: The redeployment of the information media is ended. On 30 September 1970, Honeywell took control of Bull-General Electric, and in May 1975, after having abandoned the myth of the European computer, the CII fell into the lap of the multinational company, which has always shown itself as having strict respect for the international division of labor: little computers in Europe, the big ones in the U.S.A. They palmed the baby off on one of the seven dwarfs. IBM Black and White will continue to produce only its own components. The workers of the CGE confirm that their diversified national company preferred to control "The Singing Magpie" rather than this decisive sector of electronics.

One can say that 10 years is indeed a short time on the scale of history. But when it stammers, when it is the same policy, the same myths served up by the same men, 10 years is a lot, much too much. The myths are being toned down and already on 3 May, in the large auditorium of Radio-France, Pierre Emmanuel, the poet, discovered, "torn" from his dreams like a tooth, "the terrifying kernels of reality," following a formula of Jacques Prevert. Nungesser could not soften the shock of this first confrontation with the audiovisual workers.

Francois Billeldoux, who launched the experiment of Radio-Solitude in the Cevennes for Radio-France, and Gerard Saumoge, who presides over the General Council of Herault and the destiny of Video-Animation Languedoc, had some reasons for wondering why they were in this mess. The attempted going astray and recovery of some positive experiments conducted in the past few years fell short and much can be said for the idea that participation in this conference of technicians and journalists who came back from Radio-Lorraine Coeur d'Acier is worthwhile. One can bet that the technical fairs which have been seen for the past 2 years in the audiovisual and communications field are going to henceforth become more rare and more discreet.

6108

CSO: 5500

NEW NATIONAL TELEPHONE CALL NUMBER SYSTEM PLANNED

Paris TÉLÉCOMMUNICATIONS in French Apr 79 pp 53-57

[Article by Denis Fraysse]

[Text] Reference numbers, INSEE numbers, file numbers, zipcode numbers, telephone numbers... Like it or not, numbers are the "Open sesame!" to modern systems , including the telecommunications systems.

It's a fact: beyond certain magnitudes, the human mind must shift to mnemonic techniques, filing systems, and card indices. To identify somebody in a country village with a handful of families, all it takes is first name, last name, and maybe some description of the person. In a modern postal sorting center, though, there is no room for the picturesque, human detail: it requires an exact address: street, town, département...

As for machines, their memories and their recognition faculty -- if one can use such human terms to talk about them -- stem solely from memory technology; before they can do anything for us, we must identify ourselves to them with a social security number, assigned by INSEE to every French citizen, made up of clusters of numbers with an encoded meaning: year, month, and département of birth, registration serial number....

This concept of filing by datum and numerical code is at the base of the telephone numbering system as it has grown with the growth of the system. A hundred years ago, in the "centrals" operated by the "telephone girls," you would get your call put through if all you told them was "Give me Doctor So-and-so, please." But then, as more and more people got telephones, the simple request for a connection with only a name to go with it had to give way to placing calls by the numbers, despite the anguish voiced by

the JOURNAL DE PARIS in 1897: "It is the pleasure of the Minister for the Post and Telegraph Offices, and never mind the vital statistics bureau, that we shall no longer be able to ring up Pierre, or Paul, or Jean: we shall have to ring 100, 22, or 366. We shall henceforth wear numbers, like the sheep in Berry, the taxis in Paris, and convicted criminals." Even so, in some of the larger cities, telephone people went on designating telephone centrals by the name of a street or neighborhood: CARNOT 2317, or BALZAC 4625. That nicety vanished with the introduction of automatic switching: the only language these switches understand is "machine language," which means arithmetic.

The number of digits in a telephone number has had to be increased several times, notably in 1955, when they took on the form we are familiar with these days. Increasingly, interurban and international circuits began to knit their systems together: today, every one of us can, theoretically, call some 12 million telephone customers in France and close to 3 million more all over the world, simply by dialling or touching out a number on our telephones. Even now, though, we have to begin thinking about tomorrow: within 4 years, the 12 million French telephone customers will have become 20 million, and, to deal with that doubling in clientele, the telecommunications engineers are setting up a new numbering system.

The 1955 French System

In France, the present numbering system was adopted in 1955, pending complete automatization of the telephone system. Each customer was given a "national number," made up of eight digits in its complete form, which was used only for long-distance calls. One such might be, for example, 20 55 4091. The technicians call this kind of number an AB PQ MCDU number (Fig. 1).

The first 2 digits (= AB = indicator) that you dial after having dialled 16 and got the second dial tone, identify the zone you are calling. Continental France has been divided into 72 zones, whose boundaries are not always identical with those of the départements because in most cases they were determined on the basis of telephone density: indicator 55 covers the whole extent of the départements of Haute-Vienne, La Creuse, and La Corrèze, whereas 91 covers only a portion of the Bouches-du-Rhône. In the example we picked here, dialling 20 means "I should like to talk to somebody who lives in the département of Nord."

If the caller and recipient both live in the same AB zone, the call number begins directly with the next two digits (= PQ = series number): this is the code for one of the zone's automatic exchanges. In our example, 55 means the "Faidherbe" exchange in Lille. Lastly, the MCDU cluster (digits for thousands, hundreds, tens, and units) gives you search for and access to a line in that automatic switching station.

The Future Numbering Plan

The rearrangements made to the plan in 1955 will let it work until 1985, the year when the Paris region is expected to reach saturation. When that time comes, there will have to be a new plan implemented that will allow for international recommendations and guidelines.

The International Telephone and Telegraph Advisory Committee (CCITT) in 1962 worked out a worldwide numbering plan for telephone communications. Every international number must consist of the destination number for the receiving country, plus the national ID number for the receiver, in such a way that the whole thing does not exceed 11 digits. Consequently, the countries with a great many telephones will have short ID numbers, so as to leave them more room in their national numbering systems (for example, in the US, there would be 1, plus a possible 10 digits); and, on the other hand, (for Luxembourg there would be 352 as a destination number; and for Malta, the destination number would be 356). In this plan, France is assigned two digits (33), so its domestic numbers can run as long as nine digits, or one more digit than will fit into the present system.

The French numbering system was chosen, on the basis of the international recommendations, following technical and economic studies and opinion sampling among the public. The plan finally adopted is called the "1 + 8 zone plan," and covers only continental France.

The whole of metropolitan (or continental) France is evenly divided into five major number zones, each one identified by one digit (1, 2, 3, 4, and 5) called the Z digit (Figure 2). Communication between two zones will be established by dialling first 0 (the new long-distance prefix replacing the present 16), then the zone digit Z (there will be no second dial tone to wait for), and then the eight digits of the local number. This national number is represented symbolically by the letter codes: A AB PQ MCDU. Inside any one zone, only the eight digits of the local number (AB PQ MCDU) are numbers, with these eight-digit local numbers consisting, in the intermediate phase (defined below) by placing ahead of the actual six- or seven-digit number, the telephone indicator with its two (AB) or one (A) digits.

The advantages of this option are the following. You have a capacity of at least 200 million numbers for the natural expansion of major long lines and for initiating services requiring additional numbers, such as telecopy circuits. One major pool of ID numbers is set aside for new international services like Euro-signal or ship-to-shore calls. Numbers for special national services, which will go on using 1 to start with, will move up to three digits: for example, the current information number, 12,

a) Les 5 zones définitives



b) Exemples



FIGURE 2. The Future Telephone numbering plan in its final phase: 5 major zones, where the dialling system will be uniform throughout: from one zone to another, first 0, then 9 digits; inside each zone, 8 digits directly.

- a) the five final zones
- b) examples
- 1. (8 digits)
- 2. Paris region
- 3. Southern France
- 4. Corsica

will become 121; this will open up possible new combinations and, for example, there can be a digital distinction between calls to the local gendarmes and the police, who now share the same number 17. Finally, users would get the benefit of numbers easy to remember, and of specific, accurate information in case of error.

Finally, this plan makes it possible to achieve the uniformity customers require in taking polls. From the user's point of view, in addition to the fact that the present national number becomes the new local number, the small number of zones will make it easier to commit numbers to memory, and to understand the plan as a whole.

Intermediate Phase

The 1 + 8 numbering plan calls for moving into an intermediate phase in 1985, the advantage of which is, on the one hand, to simplify the electromechanical modifications to the switching stations (of which more later) and, on the other hand, to allow users to become accustomed gradually at first to an eight-digit local number system and, later on, to a national system with nine digits.

The Ile-de-France will be the first of the final zones, identified with a 1. Local numbers there will move to eight digits, adding one more digit ahead of the present seven: 4 for Paris, Hauts-de-Seine, Seine-Saint-Denis, and Val-de-Marne; 3 for Yvelines and the Val-d'Oise; and 6 for Essonne and Seine-et-Marne. For calls within this zone, users may call from one département to another as if making local calls, but outside calls will be dialled as they are right now, first dialling 16, then waiting for the second dial tone to dial the eight digits.

The province of Ile-de-France as a whole will temporarily be a single eight-digit zone. The inter-city indicator number will be dialled ahead of the present six-digit numbers, and the long-distance 16 indicator will be dropped within this large zone; for example, a user in Marseille will dial another in Lille direct, using only eight digits, just as if he were calling his neighbor in Marseille. However, the 16 indicator and the second dial-tone will be retained when he wishes to call a number in Ile-de-France. (Figure 3)

People in Ile-de-France (which means Paris, Hauts-de-Seine, Seine-Saint-Denis, Val-de-Marne, Essonne, Yvelines, Val-d'Oise, and Seine-et-Marne) have slightly different numbers, because when the 1955 plan was implemented their switch boards had three digits rather than two, usually followed by four MCDU digits. They have been regrouped into a single zone, whose long-distance indicator, when someone is calling them from outside, has only one

digit: 1. So they, like everybody else, will have the eight national digits, for example, 1 538 2 330, which falls into the A BPQ MCDU classification. The same applies to people in Oise, whose code number is 4 (this département used to belong to the Ile-de-France number zone).

To sum up, if you break down the code number and the rest of the number, the eight-digit plan takes the form of 2 + 6 digits in the rest of France, and 1 + 7 in Ile-de-France and in Oise.

Rearrangement of the Current Plan

Since the nominal capacity of a PQ series is 10,000 numbers, and that of an AB zone 1 million (10 million for zone A = 1 for the Paris region), that for the eight-digit plan as a whole must be 100 million numbers for all of France, which will provide more than ample reserves for a good many years: two telephone lines per inhabitant! That, however, is theory: reality is far less reassuring.

In an urban area, users are generally clustered fairly densely around a given exchange, and you come close to 10,000 numbers (MCDU) per series; but when you get out into the country, the demographic scattering limits them, as a rule, to 2,000: the fact is that a PQ identifies only a single exchange and it is not feasible to assign the same exchange number to several exchanges, or to tie in (in a rural area) any large number of very long individual user lines to a single exchange. Practically speaking, then, and on the average, you can use only 4,000 to 5,000 numbers in a given series.

Furthermore, in an AB zone, there are not 100 PQ series available for users, but only 90, because the PQs beginning with 1 are set aside for special services: 12 is for information, 16 for long distance, 17 for police-emergency... and 19 for international calls. Nor are there 100 AB numbering areas available, but only 90, because all ABs beginning with 0 are devoted to certain specific cases: the Eurosignal call system, special international services. And these numbering zones fill up at vastly disparate rates: La Creuse, Corrèze, and Haute-Vienne are a long way from running out of the 55 numbers, while at the same time the 78 zone, which includes the Lyon metropolitan area which is growing at top speed, is nearing saturation.

In the provinces, the regrouping into a single area code of low-population-density zones has made it possible to free long-distance codes for reassignment to saturated areas. In this way, code 01, which used to cover half the département of the Bouches-du-Rhône, has been set aside for the city of Marseille alone, with the rest of the area assigned 42, which used to apply to Mayenne alone. In 1979, the 72 code, taken back from Haute-Loire

and combined with 78, which until then had been the 2 + 6 digit (78 PQ MCDU for Lyon, made it possible to change the Lyon area to a 1 + 7=digit zone (7 BPQ MCDU) without changing the old numbers: the 7, shared by 78 and 72, will become the new A area number, the B = 8 from the old 78 will still be assigned to current customers as the first digit in the new BPQ, with the B = 2 from 72 set aside for new customers. In both cases, the switch will mean doubling the telephone number capacity.

In the Paris region, there will be two new zones set up at the end of March 1980. One will consist of Yvelines and Val-d'Oise départements, with the intercity code number 3, and the other will embrace Essonne and Seine-et-Marne départements, with the intercity code number 6; the remaining zone (which will take in Paris, Hauts-de-Seine, Seine-Saint-Denis, and Val-de-Marne) will retain its present intercity code number, 1. This change, which will remain in effect until 1985, was planned, like the one for Lyon, to require the slightest possible degree of change in customers' habits: nothing will be different when they call one another inside the Ile de France; the only difference will be that calls from the provinces, beginning in April 1980, must be dialled either with the prefix 1 (to reach the Paris central transit station), or 3 (for the Eragny center near Cergy), or 6 (for the Villabé transit center near Evry).

We would remind readers that the establishment of the Eragny and Villabé transit centers was reported in an earlier article ("Improvements in the Ile de France", in issue 29 for October 1978, pp 31-38); it is part of an overall concern for decentralization.

Modifications in Telephone Exchanges

Implementation of the plan beginning in 1985 will not raise any problems in the electronic exchanges which, even now, are moving in great numbers into the French telephone network, but it will require some changes in the "control" devices (recorders and decoders) which, in the Crossbar electromechanical exchanges, receive and process the numbers sent them from the electronic exchanges.

However, since the switching equipment manufacturers will have to perform the modifications in all Crossbar exchanges, one may well wonder whether it might not be better to make some more sweeping modifications while they are about it, so as, for one thing, to provide additional services customers have asked for (such as touchtone dialling, itemized billing, abbreviated dial codes for frequently called numbers, etc.), and, in addition, to improve their operation and maintenance as well as to facilitate the tasks of maintenance technicians; and, in short, to adapt them, at least partially, to the advantages which the electronic

exchanges naturally afford. That single operation might even go so far as to replace all Crossbar exchanges with electronic installations...

A careful scrutiny, exchange by exchange, will make it possible to choose, for each of them, the solution best suited to the individual case. To this end, three types of operations are planned.

An initial solution will consist in modifying the control devices in the Crossbar exchanges during the intermediate phase of the plan, then to replace these exchanges or to transform them completely so that they can operate in the final phase of the plan. The solution might be adopted for relatively obsolete switching stations which will be ripe for replacement around 1986-1987, and for recently built (since 1970) high-capacity (over 20,000 lines) exchanges which would be equipped, again around 1986-1987, with electronic control units.

A second solution consists in modifying the Crossbar control devices so that they will be able to function throughout all phases of the plan, but without adding any supplementary services: that solution might be adopted for medium-capacity (less than 20,000 line) exchanges brought into service after 1965.

The purpose of the third solution is the introduction of electronic control units with computerized programming into all Crossbar exchanges: this is a much more radical transformation, but one which will give electromechanical exchanges all the advantages of pure electronic switching. Candidates for this solution are exchanges built recently (since 1970) with a capacity in excess of 20,000 lines.

The need for expanding the numbering plan, of course, reflects the unprecedented growth of telecommunications in France over the past several years, but it also poses a very difficult problem, which will take at least 5 to 7 years to solve. The findings of lengthy research led to the choice of the 1 + 8 zone plan: this plan makes it possible to bring together these very important technical advantages, as part of the concern with complying with the expressed wishes of customers during the surveys.

0152

CS0: 5500

TELECOM MARKET BEING OPENED TO SMALLER COMPANIES

Paris L'USINE NOUVELLE in French 17 May 79 pl114

[Text] In order to widen its circle of suppliers, the General Directorship of Telecommunications is simplifying its approval procedures and undertaking publication of a "Practical Market Guide" which should instruct the heads of enterprises on the steps necessary in order to enter these markets.

The PTT [postal, telegraph and telephone services], particularly the DGT, have become the major French investor. Their billions are important to their industrial suppliers. Because of that, it is the fate of an entire sector of the industry which the DGT authorities have tried to take in hand. For they are pushing for innovation by means of study and consultation programs, and they are increasing the manufacturers' competitiveness abroad by assuring them of important markets.

Presently the PTT are seeking to enlarge further their circle of suppliers, particularly to include the smaller companies, which until now have come in for only a small percentage of the rising total of the administration's study contracts and orders. The influence of the Public Authorities, who have just rediscovered the "French industrial fabric" is undoubtedly felt in this decision. But it is equally cleverness on the part of telecommunications, which hope to stimulate more proposals, thus more competition and in this way reduce their suppliers' prices.

It is not easy to sensitize and attract the smaller companies. On one hand, the ties between the directors and engineers of the administration and the major industries (products of the same schools) are very close, and habit is tenacious. On the other hand, the smaller companies are often reticent to become entangled in the complicated meanders of administrative proceedings. Finally, the PTT do not have very great latitude to manoeuvre at a time when their traditional suppliers are experiencing employment and reconversion problems and when they need new loopholes in order to diversify.

In order further to attract industry, Gerard Thery, the director general of telecommunications, has just decided to simplify the approval procedures. Up to now, they dragged out for several months, if not several

years. The result was enormous redtapism and the discouragement of those wishing to propose an idea or product. For his part, Jean Syrota, the director of industrial affairs of telecommunications (DIAT) and his services will publish 5000 copies of a "Practical Guide to markets" which will instruct the head of an enterprise on the steps to take in order to enter the PTT markets.

"Not only are we opening important market possibilities," explains Jean Syrota, "but we are also furnishing the enterprises with references for exportation."

And in numerous fields, telecommunications not being the only sector involved. The DIAT is calling on engineering and lumber-yards, chemistry (for protection of telephone poles and insulation), mechanics (for distributors and connection boxes), information, measurement, optics and metallurgy (for magnetic materials).

This guide indicates the procedures to follow in order to obtain a contract in the three types of markets which the administration of telecommunications is offering:

The studies market, for which the objective is to "analyze a problem, show the feasibility of a solution, establish a manufacturing dossier and generate a report, a model or a prototype;"

The equipment market, conditioned on approval of the material;

The markets for work on telephone lines and installations.

In addition, as an annex the DIAT has given a list of subjects "to which it wishes to attract the manufacturers' attention" either in the field of terminals and services, the distribution network, transmission or energy.

In fact there is an entire series of products or services which are within the range of the smaller companies, particularly small implements (operation of wireless stations, receivers, mikes, small consumer centers, automatic number dialers). A small enterprise cannot plunge into any market without risk.

GREECE

ECEVIT ACCEPTS KARAMANLIS PROPOSAL ON BALKAN COOPERATION

Athens Domestic Television Service in Greek 1800 GMT 18 Jun 79 AT

[Text] Prime Minister Konstantinos Karamanlis today received Turkish ambassador to Athens, Necdet Tenzel, who handed him a personal message from Turkish Prime Minister Bulent Ecevit.

In his message Ecevit expressed his support of Karamanlis' initiative on Balkan cooperation and accepted the Greek prime minister's proposal for an inter-Balkan conference of communications and telecommunications experts.

As is known, the Karamanlis proposal for such a conference has received positive replies from Romania and Bulgaria. The Yugoslavian answer, which will not be delayed, is expected. The time and place has not yet been scheduled but it is expected to take place in Athens.

CSO: 5500

ITALY

RAI CONSIDERING TV AND RADIO BROADCASTING BY SATELLITE

Satellite Broadcasting Planned

Torino RADIOCOORRISPONDENTE-TV in Italian May 79 pp 16-19

[Article by Pino Di Salvo: "The Celestial Empire of TV"]

[Text] The transmitters which have sent television images into our homes up to now are about to disappear. They will be replaced by special satellites, one per nation. Within a few years, there will already be some 40 of them. Is this the beginning of conflicts, or of new forms of cooperation? For the industry, it is certainly the beginning of investments.

Rome, May--One day, and perhaps not very far in the future, we will receive directly on our television sets programs that arrive from a satellite. This is a revolution that has been talked about for some time. But only now has RAI [Italian Radio Broadcasting and Television Company] decided, through a decision by its board of directors, to set out on this adventurous road.

Until now, RAI had maintained that the matter was not an urgent one: broadcasting via satellite, it was said, did not belong to the next 10 years; it was considered a service "added on" to the traditional one, and therefore postponable. Italians do not lack opportunities to receive television and radio broadcasts today. They can receive RAI's two TV programs, and by 1982, 75 percent of the population will also be able to receive those of the regional third channel, which should begin transmitting at the end of the year. Around RAI there is also the forest of private radio and TV stations: 676 of these broadcast programs of their own production; 446 broadcast programs received from abroad; and there are 3,376 radio stations. The laws to regulate the private broadcasters will reduce their number, but the program offerings will certainly continue to be greater than the demand, especially if one takes into account the free time that Italians have available for radio and television entertainment--an average of only 1 hour 40 minutes, according to the research. Added to this is the fact that technology is offering--and will keep offering more--personalized information machines (video recorders, for example). Television via satellite might thus appear superfluous.

Why, then, has RAI decided to set out on this road? The reasons are many. But they can be summed up in one: so as not to be suffocated by the competition from other countries.

What kind of competition? There is an economic competition that has to do not so much with RAI as with our industry; and there is the competition from the other foreign broadcasters who, through the satellite, can invade Italian territory with ease.

The economic competition. Remember color television? In the confusion of polemics and hesitation, the Italian industry was left on the sidelines, and the Italian market for color television sets was invaded by the Japanese, German and multinational patents and products--a peril that could arrive for TV via satellite too.

Let's do some figuring. The experts say that in the next 10 years, the world demand for satellites (not only for radio and television, but also for other uses) will be 220 units, for a turnover of 10-15 trillion lire. At least 40 satellites will be used just for radio broadcasting. And that is not all. Launching equipment is needed for the satellites; and then there are the ground installations for sending the signals to the satellite (as well as the programs which it will broadcast directly into homes), checking them, and making them operate. Finally, the receiving equipment. On the expectation that in 1984 there will be 150 million television subscribers in Europe, and that a third of them will decide to buy the new terminals and the new sets for satellite reception, investments of 25 trillion lire will be necessary in a decade.

Until some time ago, it was thought that Italy could step delicately into this field of business and win its good share of the market without too much trouble. It will not be that way. In fact, the American and Japanese offensive has got tougher, and European solidarity has shattered. The E-SAT project (which was an initiative by the European space agency that could have been the focal point for the experiments of the countries of the Community) fell apart. The Germans went off and set out on their own road, preparing for the launching of their television satellite in 1982; the Nordic countries and the French too have decided to do the same, albeit with a slight delay.

And Italy? It will have to run for cover. A 160-billion financing plan for scientific research for the next 5 years has been prepared by the relevant ministry. Now it will have to be changed, because that plan did not anticipate the launching of a television satellite, but only a telecommunications satellite. Instead, it now provides for encouragement of research in the field of receiving terminals, so that our electronics industry will not miss the bus.

But there is another form of competition that Italy must face, and it is no less sensitive. In Geneva 2 years ago, in the course of a world conference, it was established that every country has the right to have its own satellite in space, capable of broadcasting programs on five channels. Space was cut up

into various slices, and transmission bands were assigned to each country. But in contrast to "ground" TV, TV via satellite has very wide transmission beams which make it possible to broadcast programs over an area extending beyond the borders of the individual states.

Let us take an example: The eventual Italian satellite will be able to cover almost a third of Germany, Switzerland, Austria, almost all of Yugoslavia, Malta, Albania, 21 percent of Tunisia, part of Czechoslovakia, Hungary and France, and areas of Romania, Bulgaria, Greece, Algeria and Spain. Italy in turn will be invaded by transmissions from neighboring countries. In our country, with all the satellites provided for by the Geneva Convention eventually "fixed" in the sky, it will be possible to receive some 10 foreign programs, and with more sophisticated antennas and with land links, a full 60 programs. Furthermore, a show can have sound tracks in various languages.

Against these threats of "invasion," each country can of course prepare expensive defense instruments to neutralize the enemy "attacks," at least in part. Are we then faced with the possibility of a "television war" in space? Roberto Zaccaria, member of the RAI board of directors and an expert on constitutional law and international law, observes: "The overflowing of satellite transmissions beyond national borders is certainly a serious problem. It can spawn reasons for conflict among the various states, but it can also become an opportunity for international cooperation...."

In either case, Italy cannot just look in from the outside.

How TVDS Works

The system of direct radio and television broadcasting via satellite (TVDS) works as follows.

A satellite weighing between 1,000 and 1,200 kilograms and equipped with 5 transmitters (all for television, or 4 for television and 1 for radio programs, with 20 channels) is launched into orbit.

The satellite takes a position about 33,000 kilometers above the earth's surface, and orbits with the same velocity as the earth, so that it is as a fixed point in space. The satellite will replace the traditional transmitter located on a mountain-top. Its program-broadcasting capacity will be far greater than that of transmitters on the ground.

The transmission system is nothing new, in an absolute sense. There have been satellites transmitting like this for some time now. But their use is different from the transmissions of the future. Here is the reason why. Today, RAI itself uses satellites when it has to transmit its programs to other radio-television stations; and likewise when it has to receive them. But these connections are solely between two central broadcasting services. For example, RAI's correspondent in New York sends one of its programs to Italy. The program is received by the Fucino space center, which in turn sends it to the RAI

center on Via Teulada. From there, the program is broadcast into the ether through transmitters and links and is picked up by the television antennas on the rooftops of houses.

With direct broadcasting via satellite, a RAI program sent to the satellite and stored in it is transmitted directly by it to earth and picked up by special antennas (they are pans with a diameter of a meter or less, placed on rooftops and connected by wire to selectors incorporated in the television sets).

Naturally, the satellites are not enough for the system to function: these special receiving systems (antennas and TV sets) are necessary too. The cost of a receiving set is around 1.5 million lire today; but it is thought that with mass production, their cost could come down to half a million or even a quarter of a million lire.

Advantages of Cable TV

Turin RADIOCORRIERE TV in Italian May 79 p 19

[Article by Enzo Castelli: "Let's Try to Enter the Electronic Forest"]

[Text] Direct TV by satellite is to be seen as perhaps marginal component of the immense "electronic equipment forest" that is growing up around us: high fidelity, video recorders, video cassettes, calculators, cable television, teletext, home computer terminals, control and security systems, medical equipment.

This equipment offers a correspondingly wide variety of alternatives for diversion, information, services.

CATV (cable television) is a type of evolution rich in lessons for the development of TVDS. The research done in those areas of the United States where subscribers already have many channels available from CATV and a vast range of other electronic equipment indicate that the subscriber is inclined to devote more time to television if a larger number of programs is offered to him; but they also indicate that his use tends to break up (or "segment")--that is, that he tends to devote time to programs that are more in line with his own culture and aspirations.

Greater availability of channels in fact makes it possible to satisfy better the public's expectations for program differentiation. With single-channel or two-channel television, either the expectations of the various social groups are averaged out (with the risk of programming considered unsatisfactory by some of the groups), or else these groups are put on a waiting list, as it were, because of the difficulty of time-slotting specialized programs. But with multichannel television, these programs, which sometimes take on the character of new services, are easier to slot at the right times.

Let us suppose that a country has such a shortage of paper that no more than one or two newspapers can be printed: it is inevitable that political news, sports, economic news, letters to the editor, and advertising mainly of very common consumer items have to be included in them.

If the paper shortage were relieved and there were enough for 10 newspapers, what would happen?

It is probable that after an initial battle to grab as many readers as possible, the directors of the various newspapers would come to realize that society is differentiated into groups according to aspirations, interests, age, each of which requires different news or diversions. The specialized newspaper is born: the economic paper, the sports paper, the cultural paper, or those intended to open up services to the public (announcements, mail-order business), as well as differentiated advertising too.

Thus it is possible that national multichannel television, such as what is envisioned with the use of satellites, would also lead to the specialization of some channels.

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CSO: 8328/1431

LUXEMBOURG

TV SATELLITE TO BROADCAST TO FRANCE, FRG

Duesseldorf WIRTSCHAFTSWOCHE in German 21 May 79 p 18

[Excerpt] In spite of all the heated discussions, from 1982 on there will be commercial television for 15 million participants in the FRG. The profits will flow abroad, for the instigator is called Radio-Tele-Luxembourg (RTL).

The miracle comes from space. At the beginning of 1982, RTL will have stationed a television satellite at an altitude of 36,000 kilometers above the equator; it will broadcast TV programs (financed by advertising) at five frequencies, to northern France, Luxembourg, Belgium, and the FRG. The satellite, at 19 degrees West longitude, will cover the FRG from Hamburg to the East German border and to Wurzberg, and will reach 15 million of the total of 20 million West German TV viewers.

And it's perfectly legal. For Luxembourg's only broadcaster RTL (which is 54 percent in the possession of a holding company under the leadership of the Belgian Baroness de Launoit, with the rest held by French concerns) received its own satellite parking place, like all the other European countries, at the 1977 world radio conference in Geneva. Graas exults: "For that reason, no one can set up an interference broadcast against us, regardless of the fact that Luxembourg is advised to disregard boundaries in all directions."

The RTL commercial broadcast from space can normally be received with a small, parabolic house antenna (which costs less than 1,000 marks). But it can also immediately penetrate the cable networks that are just now being laid out in the FRG by the German Post Office.

Graas has already succeeded once in getting into a foreign cable network: in Belgium, which is 65 percent covered by cable and where radio and TV advertising is forbidden by law. Belgium had to admit RTL-TV, because Graas was able to present a decision of the European Court of Justice. According to this decision, radio and TV broadcasts, including advertising, are services in the sense of the EEC treaty, and may not be hindered.

That is how FDP [Free Democratic Party] media expert Helmut Schaefer sees it too: "Even small states can erect no barriers against satellites." Schaefer challenges the German legal public radio institutions to adapt themselves to the threatening commercial competition, but in Graas' opinion, "they are still asleep, fortunately for us."

At present, the RTL strategists are concerned only with how they are to transport their transmitter to 19 degrees West longitude over the equator. For at the summit meeting between Helmut Schmidt and Valery Giscard d'Estaing in mid-September 1978 in Aachen, the planned joint European satellite, which was to have been launched with the U.S. Space Shuttle, was buried. The Germans now want to launch their own satellites (administrative work by Messerschmidt-Boelkow-Blohm), and the French their Aerospatiale satellites -- carried by the French Ariane rocket. "We could fly along with either one," says Graas of RTL, "but the decision has not yet been made." The problem: because Luxembourg covers a smaller geographical portion of Europe, it may "broadcast only more weakly, and strange as it sounds, that requires a larger antenna on a foreign satellite" (Graas). The technical solution has not yet been found. So in the mean time RTL is setting up its own satellite. That would be cheaper anyway, says Graas, because RTL alone needs only a smaller satellite than other countries.

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TURKEY

ECEVIT STRESSES IMPORTANCE OF DEVELOPING COMMUNICATIONS

Ankara Domestic Service in Turkish 1000 GMT 27 Jun 79 TA

[Excerpt] Prime Minister Bulent Ecevit said today that the government has entered a period of rapidly developing foreign economic relations, in a balanced way based on many factors.

Ecevit, speaking after having visited the communications factory and research center of the PTT [Post, Telephone and Telegraph Administration] directorate general in Istanbul's Umraniye District, said that export revenues had increased greatly despite obstacles, and that communications would contribute considerably to further increasing these revenues. Ecevit said that communications are becoming increasingly important in economic relations as well as in human relations. Pointing out that major development steps are being taken in internal and external telephone communications, Ecevit continued: It is very important for our economic relations to improve our communications especially with European countries. Turkey is now concluding a stage in which it was able to conduct its communications with certain Middle East countries, with which it is trying to develop its economic relations, through European countries. Thus, Turkey will soon become an important world communications center.

Pointing out that reaching the modern civilization level envisaged by Ataturk is possible only through the early acknowledgement and assimilation of advanced technologies, Ecevit added that the PTT will not only transform the country into a world communications center, but it will also offer the services of Turkish engineers, technicians and workers to regional countries.

Ecevit concluded: As is known, our government is determined to contribute to the development of our region as well as of Turkey and to increase our foreign currency earnings through the offer of services to regional countries. I believe that the technical level attained by the PTT shows that it can assume the communications work of many Middle East and African countries.

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